

24 June 2003

Mr. Steve Trent Fluor Hanford Inc. 825 Jadwin Ave. Richland, WA 99352

Subject: Contract No. 630

Analytical Data Package

Dear Mr. Trent:



LvLl Batch #	0 <u>305L3</u> 29
SDG#	(H2194)
SAF#	F03-006
Date Received	5-02-03
# Samples	6
Matrix	Soil
Volatiles	X
Semivolatiles	X
Pest/PCB	X
DRO/GRO/KRO	X
Herbicides	X
GC Alcohol	X
Metals	X
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory Incorporated

Orlette S. Johnson Project Manager RECEIVED
AUG 1 1 2003

EDMC

Lionville Laboratory, Inc. VOA ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID	LVL	# MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
				··········	<u></u>	
B16W79	001	S	03LVJ055	04/28/03	N/A	05/16/03
B16W80	002	.\$	03LVJ055	04/28/03	N/A	05/16/03
B16W81	003	S	03LVJ055	04/29/03	N/A	05/16/03
B16W82	004	S	03 LVJ05 5	04/29/03	N/A	05/16/03
B16W83	005	S	03LVJ055	04/29/03	N/A	05/16/03
B16W90	006	S	03LVJ055	04/28/03	N/A	05/16/03
B16W90	006	MS S	03L V J055	04/28/03	N/A	05/16/03
B16W90	006	MSD S	03L VJ05 5	04/28/03	N/A	05/16/03
LAB QC:						
VBLKSX	MB1	s	03LVJ055	N/A	N/A	05/16/03
VBLKSX	MB1	BS S	03LVJ055	N/A	N/A	05/16/03





Client: TNU-HANFORD B03-006

LVL#: 0305L329

SDG/SAF # H2194/B03-006

W.O. #: 11343-606-001-9999-00 Date Received: 05-02-2003

GC/MS VOLATILE

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8260B for TCL volatile target compounds on 05-16-2003.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. Samples were analyzed within holding time.
- 3. Non-target compounds were not detected in the samples.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. All blank spike recoveries were within EPA QC limits.
- 7. The method blank contained the common laboratory contaminants Methylene Chloride and Acetone at levels less than the CROL.
- 8. Internal standard area and retention time criteria were met.
- 9. "I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

J. Michael Taylor

President

Lionville Laboratory Incorporated

 $som \group \data \voa \tmu-hanford \0305-329. doc$

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 8 pages.

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GLOSSARY

DATA QUALIFIERS

U	=	Compound was analyzed for but not detected. The associated numerical value is the estimated
		sample quantitation limit which is included and corrected for dilution and percent moisture.

- J = Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- I = Interference.
- NQ = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aidol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TIC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



GLOSSARY

ABBREVIATIONS

BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.



TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



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Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

RFW Batch Number: 0305L329 Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: la

Sample
Surrogate Bromofluorobenzene 104 % 106 % 106 % 107 % 107 % 109 % Recovery 1,2-Dichloroethane-d4 105 % 103 % 110 % 108 % 112 % 114 % Chloromethane
Recovery 1,2-Dichloroethane-d4 105
Chloromethane
Chloromethane 11 U 12 U 12 U 11 U 12 U 11<
Bromomethane 11 U 12 U 12 U 11 U 12 U 12 U 13 U
Vinyl Chloride 11 U 12 U 12 U 11 U 12 U
Chloroethane 11 U 12 U 12 U 11 U 12 U 12 U 11 U 12 U
Methylene Chloride 6 U 6 U 2 JB 2 JB 3 JB 3 JB Acetone 13 B 7 JB 8 JB 9 JB 10 JB 7 JB Carbon Disulfide 6 U
Acetone 13 B 7 JB 8 JB 9 JB 10 JB 7 JB Carbon Disulfide 6 U
Carbon Disulfide 6 U
1,1-Dichloroethene 6 U </td
1,1-Dichloroethane 6 U </td
1,1-Dichloroethane 6 U </td
1,2-Dichloroethene (total) 6 U <
1,2-Dichloroethane 6 U 6 U 6 U 6 U
1,2 Dichiolocchane
2-Butanone 11 U 12 U 12 U 11 U 12 U 11 U
1,1,1-Trichloroethane 6 U 6 U 6 U 6 U 6 U
Carbon Tetrachloride 6 U 6 U 6 U 6 U 6 U
Bromodichloromethane 6 U 6 U 6 U 6 U 6 U
1,2-Dichloropropane 6 U 6 U 6 U 6 U 6 U
cis-1,3-Dichloropropene 6 U 6 U 6 U 6 U 6 U
Trichloroethene 6 U 6 U 6 U 6 U 6 U
Dibromochloromethane 6 U 6 U 6 U 6 U 6 U
1,1,2-Trichloroethane 6 U 6 U 6 U 6 U 6 U
Benzene 6 U 6 U 6 U 6 U 6 U
Trans-1,3-Dichloropropene 6 U 6 U 6 U 6 U 6 U
Bromoform 6 U 6 U 6 U 6 U 6 U
4-Methyl-2-pentanone 11 U 12 U 12 U 11 U 12 U 11 U
2-Hexanone 11 U 12 U 12 U 11 U 12 U 11 U
Tetrachloroethene 6 U 6 U 6 U 6 U
1,1,2,2-Tetrachloroethane 6 U 6 U 6 U 6 U 6 U
Toluene 6 U 6 U 6 U 6 U 6 U
*= Outside of EPA CLP QC limits.

Report Date: 05/30/03 11:39

RFW Batch Number: 030	5 L329 Clie	ent: TNUHANFORI	F03-006 H219	4 Work Order	11343606001	Page: 1b	
	Cust ID:	B16W79	B16W80	B16W81	B16W82	B16W83	B16W90
	RFW#:	001	002	003	004	005	006
Chlorobenzene		6 U	6 U	6 U	6 U	6 U	6 U
Ethylbenzene		6 U	6 Ü	6 U	6 U	6 U	6 U
Styrene		6 U	6 U	6 U	6 U	6 U	6 U
Xylene (total)		6 U	6 U	6 U	6 U	6 U	6 U
N-butylbenzene *= Outside of EPA CLP	QC limits.	6 U	6 U	6 U	6 U	6 U	6 U

Lionville Laboratory, Inc.

Volatiles by GC/MS, HSL List

Report Date: 05/30/03 11:39 💸

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 2a RFW Batch Number: 0305L329 Cust ID: B16W90 B16W90 VBLKSX VBLKSX BS 03LVJ055-MB1 006 MSD 03LVJ055-MB1 006 MS Sample RFW#: SOIL SOIL SOIL SOIL Information Matrix: D.F.: 1.00 1.06 1.00 1.00 ug/Kg ug/Kg ug/Kg Units: ug/Kg 94 Toluene-d8 102 104 9 100 % 윷 96 왐 Bromofluorobenzene 112 114 ş. 102 욯 Surrogate 123 122 ş. 94 % 92 1.2-Dichloroethane-d4 Recovery 10 U 11 U 10 U 10 U Chloromethane _____ Bromomethane 10 U 10 U 10 U 11 U Vinyl Chloride_____ 11 Ü 10 U 10 U 10 II 10 U 10 U 11 U 10 II Chloroethane _____ Methylene Chloride 4 JB 3 JB 2 J 2 JB Acetone 6 J JB JΒ 8 JB 5 U 5 Carbon Disulfide U 5 Ü U 120 1,1-Dichloroethene____ 107 5 Ü 5 U 1,1-Dichloroethane_____ 5 U 6 II 5 U 5 U 1,2-Dichloroethene (total) U 5 U 5 U IJ Chloroform 1,2-Dichloroethane_____ 6 IJ 5 TI Ū 2-Butanone 10 U 10 U 10 11 U

5 U

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6 U

Toluene

*= Outside of EPA CLP QC limits.

1,1,1-Trichloroethane_____

Carbon Tetrachloride

Bromodichloromethane_____

1,2-Dichloropropane_____

cis-1,3-Dichloropropene______

Dibromochloromethane

1,1,2-Trichloroethane

Benzene

Trans-1,3-Dichloropropene_______Bromoform_____

4-Methyl-2-pentanone____

2-Hexanone

Tetrachloroethene ____

1,1,2,2-Tetrachloroethane_____

RFW Batch Number: 0305L3	129 Clie	ent: TNUH	LANFORI	F03-006	H2	194 Work C	rde	r: 11343606	001	Page:	2b	_
•	Cust ID:	B16W90		B16W90	1	VBLKSX		VBLKSX BS			_	(2
	RFW#:	006 MS	3	006 MSI)	03LVJ055-N	ß1	03LVJ055-M	31		•	
Chlorobenzene		94	%	. 107	%	5	Ū	94	8			
Ethylbenzene		6	U	5	U	5	U	5	Ų			
Styrene		6	U	5.	Ū	5	Ü	5	U			
Xylene (total)		6	U	5	U	5	U	5	U			
N-butylbenzene		6	U	5	U	5	U	5	U	•		
*= Outside of EPA CLP QC	C limits.											

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5. OPCB ODRO DERO

3. Hy, Ni Pb. Sb Se/IC: C1, F1, NO, NO, A4, SQ

4 INHIN I CNTO IPH OBZYH. OBZSX, OGCIC

Hand Delivered Airbill # _

2) Ambient or Chilled

- 3) Received in Good Condition (Y) or N
- 4) Samples Properly Preserved
- (Y) or N 5) Received Within Holding Times

(Y) or N 4) Unbroken on Sample (Y) or N **COC Record Present**

2) Unbroken on Outer Package (Y) or N

3) Present on Sample

Upon Sample Rec't Cooler

Temp. 1.3 °C 7915 8463 3221

FH-Central Plates	u Project	CI	HAIN OF CUST	ODY/S.	AMPL	E ANAL	YSIS	REQUEST	F	03-006-62	Page <u>1</u>	of 1	
Collector Johansen/Pope/Pfister		Comps LC 1	any Contact Hul <i>strom</i>	Telephor 373-39				Project Coordinat TRENT, SJ	or Price Code	8N		rnaround	
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling		ing Location -A-37 (C4106); (12.5'-15	; ;;)				SAF No. F03-006	Air Qualit	у 🗆	45]	Days	
Ice Chest No. ERC 9	6 058		Logbook No. F-N-3361		COA 117504E	S10		Method of Shipme Federal Express	ent .				
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Special Handing and/of S	torage		No. of Container(s)	1	1	1	1	1					
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dea ch	5-2-03 0945		Mish 3	2030	94	-		1- 10				L=Liquid V=Vegetation	
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FINAL SAMPLE Disposal Me	ethod					Dispo	sed By			Di	ate/Time		
<u> </u>													

FH-Central Plateau Project	CH	IAIN OF CUST	ODY/S	AMPL	E ANAL	YSIS	REQUEST	FO	3-006-63	Page 1	of 1
Collector Johansen/Pope/Pfister	Compa	ny Contact Iulstrom	Telephor 373-3	ne No.			Project Coordinate TRENT, SJ	Price Code	8N	Data Tui	rnaround
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling	Sampli	ng Location A-37 (C4106); (17.5'-20)')				SAF No. F03-006	Air Qualit	у 🗆	45]	Days
Ice Chest No. TR C 96 056		ogbook No. -N-3361		COA 117504	ES10		Method of Shipmer Federal Express				
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POSSIBLE SAMPLE HAZARDS/REMARKS			Cool 4C	Cool 40	Cool 4C	Non	e None	, i			
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Special randing and a storage	1	No. of Container(s)	1	1,		1	/'		_	<u> </u>	
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SAMPLE ANALYSIS						Instruct					
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816W80 SOIL 4[7	8 (03	1560	-/ -	 ^	1 ×	 				│ ──	
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Relinquished By/Removed From State/Time 16 45 Received Great Thomas State Chamb 4/20/20 Received	ed By/Store - 1 <i>JA</i>	ed In Di 3728 <i>42</i> 803	1645		port both kerosen	e and dies	el range compounds from	n WTPH-D analysis.	The labola	iory is to	S=Soil SE=Sodiment
Relinquished By/Removed From Date/Time Receive	ed By/Store	ed in Di	ate/Time	4) Technotium 90;	Strontiu	n-89.90 <u>– Total Sr. Jacto</u>		F232); Carbon-	14; lodine-	SO=Solid SI=Sludge W = Water
Relinguished By/Removed From 1 Date/Time 1100 Received		7 VV	03 110 atc/Time	00 12	9: Nickel-63: Ne	prunium-2	- 78r	4/22/03			O=Oil A=Air
SJEALE XI Male 5103 F	ED	EΧ									DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From Date/Time Receive	od-Bi/Ston	₩	ate/Time		-						T=Tissue W!=Wipe L=Liquid
Relinquished By/Removed From Date/Time Receiv	ed By/Stor	ed In Di	-03 09 ate/Time	, 1/3	Personnel no		ble to rom the 372 <u>8</u>				V=Vegenation X=Other
	ate/Time		Ref # / 15	on <u>5</u>	11/02						
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LABORATORY Received By SECTION			Ti	itle					1	Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION			· · · · ·		Dispo	osed By				Date/Time	

FH-Centra	l Plateau Project	C	HAIN OF CUST	YSIS	REQUEST		F03-006-64 Page 1			of <u>1</u>			
Collector Johansen/Pope/Pfis	ter		Company Contact Telephone No. LC Hulstrom 373-3928						ator	Price Code	8N		naround C
Project Designation	-4 OU - Borchole Soil Sampling		ling Location 5-A-37 (C4106); (27.5'-30)')				SAF No. F03-006		Air Quality		45]	Days
Ice Chest No. ER	c 96 056		Logbook No. IF-N-3361		COA 117504ES	10		Method of Ships Federal Expres	<u> </u>				
Shinned To	RECRA HEES (Formacly TMA) ASSI	Harler Offsi	te Property No.	030	22	2		Bill of Lading/	ir Bill	No. SEE	037		
	LE HAZARDS/REMARKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Non	\ \ \	/ —				
Special Handling	and/or Storage		Type of Container	aG	аG	aG	aG	100					
Opecial Italioning	and of Deviage		No. of Container(s)	1 120mL	l 60mL	1 120mL	60m	ı 60mL			 		<u> </u>
			Volume		NO2/NO3 -	Oil & Grease -	See item				 		
	SAMPLE ANA	LYSIS		Chromium Hex - 7196	353.2	413.1	Speci	ià//					
							I ASV	drive.			TILTO	1	
Sample No	Matrix *	Sample Date	Sample Time										
B16W81	SOIL	4/29/0	3 0745	1	1	K	/				BIGW	17/4	ISCF)
		 					 				 	 	
CHAIN OF PO	OSSESSION	Sign/Pri	nt Names	<u></u>	SPEC	CIAL INSTI	RUCTIO	ONS 180	4/2	2/03	<u> </u>	<u> </u>	Matrix *
Relinguished By/Renlay		Received By/St	ored in FRC D	DA N 314	***	he laboratory is	s to acide	ve a detection limit of sel range compounds	from WI	Vg for Carbon-14 PH-D analysis.	** The laborat	lory is to	S=Soil SE=Sediment
Relinguished By/Remove	ed From Date/Time 14	Received By/St	ored in D	Pate/Time / C		Technetium 99; Nickel-63: Net		11 1 69,90 - Total Sr, I 237 - ASV			232), Carbon	4; Iodine-	SO-Solid SI-Shudge W = Water O-Oil
Relinquished By/Kemow		Received By/St	ored In	ate/Time 5/03	1106			79	11"	7 /			A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Remove	ed From Date/Time	Received By/St	ored in D	ate/Time									T=Tissue Wi=Wipe L=Liquid V=Vegetation
Reinquished By/Remove		Received By/St	ored In D	ate/Time	Pe re	ersonnel not linquish san	availab nples fro	ole to om the 3728 //03_					X=Other
Relinquished By/Remove		Received By/St	ored In D	late/Time	l Re	: # <i>(£3</i> _or	n <u>、</u> 】	/ <u>/03</u>					
LABORATORY SECTION	Received By			Ti	tle						Ī	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method					Dispo	osed By					Date/Time	

FH-Central Pla	ateau Project	CI	IAIN OF CUST	ODY/S	AMPLI	EANAL	YSIS	REQUEST		F0:	3-006-65	Page 1	of <u>1</u>
Collector Johansen/Pope/Pfister		Compa	iny Contact Julstrom	Telephor 373-39	ne No.			Project Coordin TRENT, SJ	etor	Price Code	8N	Data Tur	7
Project Designation 200-PW-2/200-PW-4 OU	U - Borehole Soil Sampling		ing Location -A-37 (C4106); (37.5'-40	")				SAF No. F03-006		Air Quality		45 1)ays
Ice Chest No. ER C	9.6 055		ogbook No. F-N-3361		COA 117504ES	310		Method of Ships Federal Expres	S				
Shipped To EBERLINE SERVICES	RECRA 180		Property No.	030	220	2		Bill of Lading/A	ir Bill N	10. 58V	OSPC	~	
POSSIBLE SAMPLE H						I							
			Preservation	Cool 4C	Cool 4C	Cool 4C	Non						
Special Handling and	/or Storage		Type of Container	aG	aG	aG	aG 1	/		- 			
			No. of Container(s)	1	1	<u> </u>		_ / /					
			Volume	120mL	60mL	120mL	60т	L 60mL]		
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413. I	Sec item Speci	à'/					<u> </u>
	SAMPLE ANALY	SIS		} 	}		Instruct	1					
							"	1/2/1			Tam.		
 				takin piles i			<u> </u>		 		MC10:	3 . Ng - N	i sa kanada ka
Sample No.	Matrix *	Sample Date	Sample Time				7	نسب نیسترین داره کندین		والمستركة والمستركة المستركة	12 11 1 1	0 (1.5	S/ E \
B16W82	SOIL	4/29/0	3 0900			 	 			- 	BIGWA	8 (W	Cr)
				 	 -		├─				 		
				 	 	 	 				1		
					 								
CHAIN OF POSSE	SSION	Sign/Prin			SPE	CIAL INSTE	UCTIO	ONS AS	- 4	722/03			Matrix *
Relimpinghed By/Removed From	My 170 10 40 20 103 141	Received By/Stor		MC/Time	repo	he laboratory is nt both kerosene	to active and dies	ve a detection limit of el range compounds	iom WTP	g for Carbon 14. H-D analysis.	• ** The laborate	ory is to	S=Soil SE=Sediment
Relinguished By/Removed From	Date/Time 1 4-20		ed in Da	ate/Time	()			n-89,90 – Total Sr, b			232); Carbon 1	l; iodine-	SO=Solid SI=Sludge
10 Land	4-11-4-5	115	3728	t. 23.	129	Nickel 63; Ner	dunium-2	37 78x	41	12/05			W= Water O=Oùl A=Air
Relinquished By/Kemoved From	m Daw/Time	Received By/Stor		nte/Time	100								DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From	m Date/Time	Received By/Stor	nd In 115103 Da	ite/Time									T=Tissue WI=Wipc
5-16ALE SIDOL	5 103 1100 Date/Time	مسوحجا	3/40 - 3 TO	- FED	EX	Personnel nor Pelinauish sar	i availal noles fo	ole to					L=Liquid V=Vegetation X=Other
Relinquished By/Removed From	m Date Time <u> </u>	Received By Stor	min 5:	3 600	1945	Ref# 10 0	n <u>5</u>	om the 3728					
Relinquished By/Removed From	m Date/Time	Received By/Su	red in Da	ite/Time									·
LABORATORY Received SECTION	ived By			Ti	tle						D	ate/Time	
L	osal Method					Dispo	sed By				<u> </u>	ate/Time	

FH-Centra	ıl Plateau I	Project	CI	IAIN OF CUST	ODY/S	AMPL	E ANAL	YSIS	REQUEST		F03	-006-66	Page 1	of 1
Collector Johansen/Pope/Pfis	ster			iny Contact Hulstrom	Telepho 373-3				Project Coordi TRENT, SJ	ator	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW	V-4 OU - Boreh	ole Soil Sampling		ing Location -A-37 (C4106); (47.5'-50)')				SAF No. F03-006		Air Quality		45	Days
Ice Chest No. ER	2C 96	055		Logbook No. F-N-3361		COA 117504E	ES10		Method of Ship Federal Expre	ss	<u>.</u>	·		
Shipped To EBEKLINE SERV	NET VICES (Former	RA The	Offsite	Property No.	307	ZZO			Bill of Lading	Air Bill	No. SEE	050	<u>ر</u>	
EBERLINE SERVING POSSIBLE SAMP	LE HAZARDS	KEMARKS	41-1-		[Ţ					1]	T 7
				Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	ne None					
Special Handling	and/or Store	nge		Type of Container	aG	aG	aG	a-G	aG/			<u> </u>	<u> </u>	
	,	·		No. of Container(s)	1	1	1	1	/				<u> </u>	
				Volume	120mL	60mL	120mL	60m	ıL 60ml	} 	_		1	
					Chromium Hex - 7196	NO2/NO3 353.2	- Oil & Grease - 413.1	See item Spec	ài / I					
		SAMPLE ANAI	LYSIS					Instruct	7 1 √ 1 √ 1 √ 1 / 1 / 1 / 1 / 1 / 1 / 1 / 1	•				
}								N	(1)v		TIETO:			
Sample No	0.	Matrix *	Sample Date	Sample Time			or ricky and the second						M.C.	
B16W83		SOIL	4/24/03	1020	X	X	/ _	/			BIGUX	9 (W	\$(F)	
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						ļ		 		<u> </u>			 -	 -
						-	- 	 				 	 	
CHAIN OF PO	OSSESSION		Sign/Prin			SPI	ECIAL INSTI	RUCTIO	ONS 1	n	4/24/03			Matrix *
Relinquished By/Remdy	Washing	Date/Time	Received By/Stor		15/1/21	(M) Leb	·The laboratory i out both kerosen	s t o achie e and dies	vo a detection limit of sel range compounds	from WT	i /g for Carbon-14 . PH-D analysis.	** The labora	itory is to	S=Soil SE=Sodiment
Relinquished By/Remove	ed From	Date/Time	Received By/Stoi	ed In Da			Technetiam-99; 9: Nickel-63: Ne		n-89,90 Total Sr;	sotopic T	horium (Thorium-	732); Carbon-	14; Iodine-	SO=Solid SI=Shadge W = Water
Relinquished By/Ramov		H. 290	Received By/Sto	372 Q 4	49 - Cate/Time	~		<u></u>	9	gi	4/22/63			O=Oil A=Air DS=Drum Solids
13 3728	5107	1100	SJGALE	Mach 51	OB 1	100								DL=Drum Liquids T=Tisauc
Relinquished By/Remoy		Date/Time 1 03 1/0		=			Pe	rsonnel	not available to					WI=Wipe L=Liquid V=Vegetation
Relinquished By/Remov	ed From	Date/Time	Received By/Sto	Mill 50	ate/Time 1-03 05	41-	rei Re	linquish	samples from the	e 3728				X=Other
Relinquished By/Remove		Date/Time	Received By/Stor		atc/Time		~	" <i>إ</i> ــــــــ	rui — IZ /_[1 <u>03</u>]_
Puboranous I	Received By				Ti	itle							Date/Time	
SECTION FINAL SAMPLE	Disposal Method						Disp	osed By			·· <u> </u>		Date/Time	
DISPOSITION														

Collector Johansen/Pope/Pfister Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling Ice Chest No.	Compa LC I Sampl 216- Field I HNI	ogbook No.	Telepho 373-3	ne No.			Project Coordina TRENT, SJ	tor Price	Code 8N	Data Tu	Luaronng	
200-PW-2/200-PW-4 OU - Borehole Soil Sampling	Field I HNI	A-37 (C4106); (17.5'-20 .ogbook No.)				373-3928 TRENT, SJ Price Code				<−	
e Chest No. TO G G G G G Field Logbook N				16-A-37 (C4106); (17.5'-20')					Quality [45	Days	
		HNF-N-3361 117504ES10 Fed						Method of Shipment Federal Express				
Shipped To RERA 452 **EBERLINE SERVICES (Formerly TMA) 4/22/07	Offsite Property No. A03022				Bill of Lading/Air Bill				1No. 3 & 03 P C			
POSSIBLE SAMPLE HAZARDS/REMARKS						_	7			T		
		Preservation	Cool 4C	Cool 4C		None	None					
Special Handling and/or Storage		Type of Container	aG	aG	a.G.	aG	19			<u> </u>		
		No. of Container(s)	1 120mL	60mL	120mL	l 60mL	60mL			ļ <u> </u>		
		Volume										
·			Chromium Hex - 7196	NO2/NO3 353.2		See item (Special Instruction	⊈/				} ,	
SAMPLE ANALYSIS						38	(12)				<u> </u>	
						<i>//</i>	ν' <u> </u>		7 P			
Sample No. Matrix * Sam	ole Date	Sample Time	<u></u>			, <u></u>	<u> </u>			20 00 00 00 00 00 00 00 00 00 00 00 00 0		
B16W90 SOIL 4/7	8 (03	1510	1	X_	<u> </u>						<u> </u>	
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				<u> </u>								
	ign/Print			SP	ECIAL INSTR	UCTIO	NS 93		2/03		Matrix *	
Relinquished By/Removed From Date/Time /6 4.5 Received From Health RE	ed By/Stor	ed in Da 3728 <u>4</u> 2803	te/Time 6 4		port both kerosene	and diese	e a detection must of a	om WTPH-D an	arbon-14: ** The labor allysis.	atory is to	S=Soil SE=Sediment	
Religanished By/Removed From Date/Time Receiv	ed By/Stor	ed in Da	te/Time	- T					Thorium-232), Carbon	14; Iodines	SO=Solid SI=Sludge	
REF 14 3728 5 103 1160 50	GAL	<u></u>	03 11	00 12	29; Nickel 63; Nept	unium-23	781	4/22/03			W = Water O=Oil	
	ed By/Stor	edak Da	te/Time								A=Air DS=Drum Solids DL=Drum Liquids	
Relinquished By/Removed From Date/Time Receiv	ed By/Stor	polinDa	te/Time		_						T=Tissee Wi⇒Wipe L=Liquid	
Relinquished By/Removed From Date/Time Receiv	ed By/Stor		<u>-03 09</u> te/Time	45	Personnel n	ot avail	able to				V=Vegetation X=Other	
Relinquished By/Removed From Date/Time Receiv	ed By/Stor	ed In Da	te/Time		Ref #	on _ Z	from the 3728					
LABORATORY Received By	 -	<u> </u>	Ti	itle					· · · · · · · · · · · · · · · · · · ·	Date/Time		
FINAL SAMPLE Disposal Method DISPOSITION			<u> </u>		Dispos	sed By				Date/Time		

				TODY/SAMPLE ANALYSIS REQUEST						F03-006-74 rage 1 v 1			<u>" </u>
Collector Johansen/Pope/Pfister		Compa	iny Contact Hulstrom	Telepho 373-3	ne No.			Project Coord TRENT, SJ		Price Code	8N	Data Tui	1
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling		ing Location -A-37 (C4106); (0.5')					SAF No. F03-006		Air Quality	/ 	45]	Days
Ice Chest No. ERC 9	6 056		Logbook No. F-N-3361	COA Method of Shipmen 117504ES10 Federal Express			ress						
Shipped To MASSERVICES (For	5103 RECRA	Offsite	Property No. Ac	30 Z	20			Bill of Ladin	g/Air Bill	№.5 <i>&</i> &	OSP		
POSSIBLE SAMPLE HAZA	RDS/REMARKS			 									
			Preservation	Cool 4C	Cool 4C	1			<u> </u>		ļ		
 Special Handling and/or S	Storage	÷	Type of Container	aG 1	aG 1				 		<u> </u>	<u> </u>	
			No. of Container(s)		<u> </u>	 			 		 	<u> </u>	<u> </u>
			Volume	60mL	250mL	1 1				})
	SAMPLE ANALYS	SIS		Pesticides - 808 i	Chioro- Herbicides EPA8151								
				Some Away to 1995 Try					Page St. Car		The profession of the second	er akçen iz rinazi feki ilkeri	
Sample No.	Matrix *	Sample Date	Sample Time								1 1 6 6 6		
B16W91	SOIL L	128/03	130	X_	<u> </u>	-					<u> </u>	<u> </u>	
	· -	<u> </u>		<u> </u>		╅━━╂			 -		 	ļ	
				 	 	4					 -	 	 -
	<u> </u>			 	 -	- -			+-		+	 	
CHAIN OF POSSESSIO)N	Sign/Print	Names	<u> </u>	I SPI	CIAL INSTRU	ictic	NS	ــــــ		ــــــــــــــــــــــــــــــــــــــ	<u>.L</u>	Matrix *
Relinquished By/Removed From	Date/Time // 15	Received By/Stor	ed In Da 3728 4240			CIAL INSTRU	JC 11C						S=Soil SE=Sediment SO=Solid
Relinquished By/Removed From	Date/Time	Received By/Stor	· · · · · · · · · · · · · · · · · · ·	ate/Time	00								SI=Sludge W = Water
REF 1A 3728 Relinquished By/Removed From	5103 1100 Date/Time	Sd GALET	//	ate/Time									O=Oil A=Air
SIGALIT M Sile	5103 1100	FED	E X										DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From		Received By/Stor	· · · · · · · · · · · · · · · · · · ·	ate/Time	سلسان		ئانہ	able to 2728					W[=Wipe L=Liquid
Relinquished By/Removed From	5.2-03 0745 Date/Time	Received By/Stor		-03 C	775	Personnel not relinquish sa Ref #	imples	from the	2				V=Vegetation X=Other
Relinquished By/Removed From Date/Time Received By/Stored In Date					_	Ref# LA	_011	-					
LABORATORY Received B	y	<u></u>		Т	itle		. <u>. </u>			·· ·		Date/Time	
FINAL SAMPLE Disposal M DISPOSITION	lethod				<u> </u>	Dispose	ed By					Date/Time	
L													

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

LIENT: TNU Hamford

urchase Order/Project:

DATE: 5-2-03

AF#Y SOW# / Release #: FO3-006

.aboratory SDG #:

03051329

	C305C329	<u> </u>			
	ALL ENTRIES MARKED "NO" MUST BE I	EXPLAINED IN	THE COMM	ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	, DNo ,	□ N/A ·	D see Comment
2.	Outside of coolers or shipping containers are free from damage?	Yes .	□ No	□ N/A	see Comment
3.	Airbill # recorded?	Yes	□ No	DNA	See Comment
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	Dive.	□ No	D N/A	D see Comment
5.	Sample containers are intact?	YYes	D 140	□ N/A	D see Commen
6.	Custody seals on sample containers intact, signed and dated?	Yes	D No	D N/A	D see Commen
7.	All samples on coc received?	Yes	□ No	DNA	· D see Commer
8.	All sample label information matches coc?	Yes .	D No	D N/A·	🖸 see Comme
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	[] No	DINA	🖸 see Comme
10	. Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	Yes	□ No	D N/A	☐ see Comme
11	. Where applicable, bar code labels are affixed to coc?	D Yes	□ No	DINIA	🛭 see Commo
12	. coc signed and dated?	NYes	□ No	□ N/A	🗆 see Comme
13	coc will be faxed or emailed to client?	E Yes	D No	D N/A	D see Comm
14	I. Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	□ No	E N/A	🖸 see Comm

Cooler # / temp (°C) and Comments:

Elc 96.056 /13"

Laboratory Sample Custodian:

Laboratory Project Manager:

Diffrien

Lionville Laboratory, Inc. BNA ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LE0575	04/28/03	05/14/03	06/07/03
B16W80	002	S	03LE0575	04/28/03	05/14/03	06/07/03
B16W80	002 MS	S	03LE0575	04/28/03	05/14/03	06/07/03
B16W80	002 MSD	S	03LE0575	04/28/03	05/14/03	06/07/03
B16W81	003	S	03LE0575	04/29/03	05/14/03	06/07/03
B16W82	004	S	03LE0575	04/29/03	05/14/03	06/07/03
B16W83	005	s	03LE0575	04/29/03	05/14/03	06/08/03
B16W90	006	S	03LE0575	04/28/03	05/14/03	06/08/03
LAB QC:						
SBLKTK	MB1	s	03LE0575	N/A	05/14/03	06/07/03
SBLKTK	MB1 BS	S	03LE0575	N/A	05/14/03	06/07/03





Client: TNU-HANFORD F03-006

LVL #: 0305L329

SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00 **Date Received: 05-02-2003**

SEMIVOLATILE

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were extracted according to Lionville Laboratory OPs based on method 3550 on 05-14-2003 and analyzed according to criteria set forth in Lionville Laboratory OPs based on SW 846 Method 8270C for client specified Semivolatile target compounds on 06-07,08-2003.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- All results presented in this report are derived from samples that met LvLI's sample acceptance 1. policy.
- Samples were extracted outside of holding time as per client instructions because the analysis has 2. been added later; however, samples were analyzed within required holding time.
- 3. Non-target compounds were detected in the samples.
- 4. All surrogate recoveries were within EPA QC limits.
- 5. All matrix spike recoveries were within EPA QC limits.
- 6. All blank spike recoveries were within EPA QC limits.
- 7. Internal standard area and retention time criteria were met.
- 8. Manual integrations are performed according to OP 21-06A-125 to produce quality data with the All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

J. Michael Taylor

President

Lionville Laboratory Incorporated

som\gorup\data\bna\tnu-hanford-0305-329.doc
The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 2 7 pages.

GLOSSARY

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) where a 1:1 response is assumed; or 2) when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero. For example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 31.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- D = Identifies all compounds identified in an analysis at a secondary dilution factor.
- i = Interference.
- NO = Result qualitatively confirmed but not able to quantify.
- A = Indicates that a TIC is a suspected aldol-condensation product.
- N = Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TlCs), where the identification is based on a mass spectral library search. It is applied to all TlC results. For generic characterization of a TlC, such as chlorinated hydrocarbon, the N code is not used.
- X = This flag is used for a TiC compound which is quantified relative to a response factor generated from a daily calibration standard (rather than quantified relative to the closest internal standard).
- Y = Additional qualifiers used as required are explained in the case narrative.



GLOSSARY

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spike solutions
		and carried through all the steps in the method. Spike recoveries are reported.

BSD = Indicates blank spike duplicate.

MS = Indicates matrix spike.

MSD = Indicates matrix spike duplicate.

DL = Suffix added to sample number to indicate that results are from a diluted analysis.

NA = Not Applicable.

DF = Dilution Factor.

NR = Not Required.

SP, Z = Indicates Spiked Compound.



4

TECHNICAL FLAGS FOR MANUAL INTEGRATION

Manual quan modifications or integrations are performed routinely to improve the data quality for a variety of technical reasons. Documentation of these modifications should be clear and concise. The following "flags" are used to indicate the technical reasons for quan modifications:

- MP Missed Peak: manually added peak not found by automatic quan program.
- PA Peak Assignment: quan report was changed to reflect correct peak assignment.
- RI Routine Integration: routine integrations are performed for some analytes that are consistently integrated improperly by the automatic integration programs. Examples are the dichlorobenzene isomers on the VOA packed column and benzo(b)fluoranthene/benzo(k)fluoranthene which are poorly resolved on the BNA column.
- SP Split Peak: the automatic integration improperly split the peak; a manual integration was performed to get the correct area.
- CB Coelution/Background: peak was manually integrated to eliminate contribution from coeluting compounds, background signal, or other interference.
- PI Proper Integration: a peak with poor or inconsistent integration (e.g., excessive tail) was properly integrated manually.



Lionville Laboratory, Inc.

Client: TNUHANFORD F03-006 H2194

RFW Batch Number: 0305L329

*= Outside of EPA CLP QC limits.

Semivolatiles by GC/MS, Special List

Report Date: 06/12/03 11:13

Page: la

Work Order: 11343606001

B16W80 B16W81 B16W82 B16W80 B16W80 Cust ID: B16W79 004 003 002 MS 002 MSD 001 002 RFW#: Sample SOIL SOIL SOTT SOIL SOIL SOIL Matrix: Information 1.00 1.00 1.00 1.00 1.00 D.F.: 1.00 UG/KG UG/KG UG/KG UG/KG UG/KG Units: UG/KG ş 71 ¥ 73 욯 73 욯 78 ş 67 왐 75 Nitrobenzene-d5 왛 72 왐 71 Ł 왐 71 72 왐 70 왐 2-Fluorobiphenyl 64 Surrogate 욯 98 왗 93 왆 88 왐 ş. 87 Terphenyl-d14 82 ş. 94 Recovery 왕 왇 74 73 왗 74 78 왕 76 જ Phenol-d5 68 왉 63 왛 67 왐 66 ş 67 옿 67 2-Fluorophenol 59 ¥ ş. 70 60 67 ş. 69 72 왐 63 2,4,6-Tribromophenol ==fl=======fl =fl===== r % 350 350 Ħ ¥ 71 IJ 350 Ü 67 360 Phenol 350 U 350 U 350 ŢΤ 350 U U 350 U bis(2-Chloroethyl)ether 360 65 왍 350 U 350 U 63 왐 2-Chlorophenol_____ IJ 350 IJ 360 350 U IJ 350 U 350 U 350 350 U 360 Ħ 1.3-Dichlorobenzene 350 U 350 IJ 66 ¥ 66 ¥ 360 U 350 U 1,4-Dichlorobenzene _____ 350 U 350 TI 350 IJ 350 U 360 U 350 U 1,2-Dichlorobenzene_____ 350 II 350 U U 350 U 350 U 350 360 U 2-Methylphenol 350 U 350 U 350 U IJ 350 IJ 350 U 2.2'-oxybis(1-Chloropropane) 360 350 U 350 U U 350 U 3- and/or 4-Methylphenol_____ 360 U 350 U 350 350 U 350 U 67 옿 67 ¥ 350 U 360 U N-Nitroso-di-n-propylamine _____ 350 U 350 U 350 U 350 U 350 U 360 U Hexachloroethane 350 U 350 U 350 13 350 U 350 U 360 U Nitrobenzene _____ 350 U 350 U 350 U 360 U 350 U 350 П Isophorone 350 U 350 U 350 U 350 U 360 U 350 U 2-Nitrophenol_____ 350 U 350 TT 350 U 350 U 2,4-Dimethylphenol_____ 360 U 350 U 350 U 350 U 350 U 350 U 350 Ū 360 U bis(2-Chloroethoxy)methane_____ 350 U 350 U 350 U 350 U 360 U 350 U 2,4-Dichlorophenol 350 U 350 U 350 67 å 66 ક 360 U U 1,2,4-Trichlorobenzene _____ 350 U 350 U Naphthalene 360 U 350 U 360 U 350 U 4-Chloroaniline 350 U 350 U 350 U 350 U 350 U Hexachlorobutadiene_____ 360 U 67 350 U 350 U 350 U 67 옿 옿 360 U 4-Chloro-3-methylphenol_____ 350 U 350 U 350 U 2-Methylnaphthalene_____ 360 U 350 U 350 U U 350 U 350 U 350 U 360 U 350 350 U Hexachlorocyclopentadiene _____ 350 U 350 U 350 U 350 U 2,4,6-Trichlorophenol_____ 360 U 350 U 870 U 870 U 880 U 870 U 870 U 890 U 2.4.5-Trichlorophenol

Cust ID: B16W79 B16W80 B16W80 B16W81 B16W82	RFW Batch Number: 0305L329	Client:	TNUH	ANFORD F03	-006	H2194 1	Work	Order: 11	3436	06001		Page: 1b		
2-Chloronaphthalene	Cust ID:	B16W79		B16W80		B16W80		B16W80		B16W81				
2-Nitroaniline	RFW#:	001		002		002 MS		002 MSD		003		004		F
2-Nitroaniline	2-Chloronaphthalene	360	U	350	U	350	U	350	Ū	350	U	350	Ū	
Dimethylphthalate 360 U 350 U		200	Ü	870	U	870	U	870	U	870	U	880	U	
Acenaphthylene 360 U 350		360	U	350	U	350	U	350	U	350	U	350	U	
3-Nitronilline	Acenaphthylene	360	U	350	U	350	U	350	U	350	U	350	U	
3-Nitroaniline	2,6-Dinitrotoluene	360	U	350	U	350	U	350	U	350	U	350	U	
Acenaphthene	3-Nitroaniline	890	Ü	870	U	870	U	870	U	870	U	880	U	
2,4-Dinitrophenol 890 U 870 U 870 U 870 U 870 U 880 U 870 U 880 U 10 Enzofuran 360 U 350 U	Acenaphthene	360	U	350	Ū	67	*	67	옿	350	U	350	U	
4-Nitrophenol 890 U 870 U 350	2.4-Dinitrophenol	890	Ü	870	U	870	U	870	U	870	U	880	U	
Dibenzofuran 360 U 350 U	4-Nitrophenol	890	U	870	U	70	*	61	옿	870	U	880	U	
2,4-Dinitrotoluene 360 U 350 U	Dibenzofuran	360	U	350	Ü	350	Ū	350	Ü	350	U	350	Ū	
Diethylphthalate	2.4-Dinitrotoluene	360	U	350	U	80	૪	81	૪	350	U	350	Ū	
4-chlorophenyl-phenylether 360 U 350 U 4.6-Dinitro-2-methylphenol 890 U 870 U 870 U 870 U 870 U 870 U 880 U 8.0 W	Diethylphthalate	360	U	350	Ū	350	U	350	U	350	U	350	U	
Pluorene	4-Chlorophenvl-phenylether	360	U	350	U	350	U	350	U	350	U	350	U	
4-Nitroaniline 890 U 870 U 870 U 870 U 870 U 870 U 870 U 880 U 870 U 880 U 870 U 870 U 880 U 870 U 870 U 880 U 870 U 870 U 870 U 880 U 870 U 870 U 870 U 880 U 870	 		U	350	Ū	350	U	350	Ū	350	U	350	U	
4,6-Dinitro-2-methylphenol 890 U 870 U 870 U 870 U 870 U 870 U 870 U 880 U 350 U <td< td=""><td>4-Nitroaniline</td><td>890</td><td>U</td><td>870</td><td>U</td><td>870</td><td>U</td><td>870</td><td>Ū</td><td>870</td><td>U</td><td>880</td><td>U</td><td></td></td<>	4-Nitroaniline	890	U	870	U	870	U	870	Ū	870	U	880	U	
N-Nitrosodiphenylamine (1) 360 U 350 U 4-Bromophenyl-phenylether 360 U 350 U 3	4.6-Dinitro-2-methylphenol	890	Ų	870	Ū	870	U	870	σ	870	U	880	U	
4-Bromophenyl-phenylether 360 U 350 U			U	350	U	350	U	350	U	350	U	350	U	
Hexachlorobenzene			U	350	Ū	350	U	350	IJ	350	U	350	U	
Pentachlorophenol	Hexachlorobenzene	360	U	350	Ū	350	U	350	Ü	350	U	350	U	
Phenanthrene 360 U 350 U	Pentachlorophenol	890	U	870	U	67	*	62	*	870	U	880	U	
Anthracene 360 U 350 U 3	Phenanthrene	360	Ū	350	Ū	350	U	350	ប	350	U	350	U	
Carbazole 360 U 350 U 35	Anthracene	360	U	350	U	350	U	350	U	350	U	350	U	
Di-n-butylphthalate	Carbazole	360	U	350	Ū	350	U	350	U	350	Ü	350	Ų	
Fluoranthene 360 U 350 U	Di-n-butylphthalate	360	U	350	U	350	U	350	υ	350	Ū	350	U	
Pyrene 360 U 350 U 78 % 80 % 350 U 350 U Butylbenzylphthalate 360 U 350 U			U	350	U	350	U	350	U	350	U	350	U	
Butylbenzylphthalate 360 U 350			U	350	U	78	8	80	8	350	Ū	350	U	
3,3'-Dichlorobenzidine	Butylbenzylphthalate	360	U	350	U	350	U	350	U	350	U	350	Ū	
Benzo (a) anthracene	3,3'-Dichlorobenzidine	360	U	350	U	350	U	350	U	350	U	350	U	
Chrysene			Ų	350	U	350	U	350	U-	350	U	350	U	
bis(2-Ethylhexyl)phthalate 21 J 350 U 21 J 350 U 3			U	350	U	350	U	350	U	350	U	350	Ų	
Di-n-octyl phthalate 360 U 350 U	bis(2-Ethylhexyl)phthalate	_ 21	J	350	Ü	21	J	350	U	350	U	350	U	
Benzo (k) fluoranthene 360 U 350	Di-n-octyl phthalate	_ 360	Ū	350	U	350	Ū	350	U	350	U	350	U	
Benzo (k) fluoranthene 360 U 350	Benzo(b)fluoranthene	360	U	350	U	350	U	350	U	350	U	350	U	
Benzo (a) pyrene 360 U 350 U <td>Benzo(k)fluoranthene</td> <td>_ 360</td> <td>U</td> <td>350</td> <td>U</td> <td>350</td> <td>Ü</td> <td>350</td> <td>U</td> <td>350</td> <td>U</td> <td>350</td> <td>U</td> <td></td>	Benzo(k)fluoranthene	_ 360	U	350	U	350	Ü	350	U	350	U	350	U	
Indeno(1,2,3-cd)pyrene	Benzo(a)pyrene	_ 360	U	350	U	350	U	350	U	350	U	350	Ū	
Dibenz(a,h)anthracene 360 U 350	Indeno(1,2,3-cd)pyrene	_ 360	U	350	U	350	Ŭ	350	U	350	U	350	U	
Benzo (g,h,i) perylene 360 U 350	Dibenz(a,h)anthracene	360	U	350	U	350	U	350	U	350	Ū	350	Ü	
2-Butoxyethanol 360 U 350 U	Benzo(g,h,i)perylene	_ 360	U	350	U	350	U	350	U	350	U	350	U	
Benzyl alcohol 360 U 350 U 350 U 350 U 350 U 350 U			U	350	U	350	U	350	U	350	U	350	U	
*= Outside of EPA CLP QC limits.	Benzyl alcohol	360	U	350	U	350	U	350	U	350	U	350	Ū	
	*= Outside of EPA CLP QC limits.													

RFW Batch Number: 0305L329	Client: TNUHA	NFORD F03-006	H2194 Work	Order: 1134360	6001	Page: 1c	
Cust ID:	B16W79	B16W80	B16W80	B16W80	B16W81	B16W82	7
RFW#:	001	002	002 MS	002 MSD	003	004	∞,
Tributylphosphate	_ 45 J	350 U	350 U	350 U	350 U	350	U
(1) - Cannot be separated from Di	phenylamine. *=	Outside of EP	A CLP QC limi	ts.			

Lionville Laboratory, Inc.

Client: TNUHANFORD F03-006 H2194

RFW Batch Number: 0305L329

*= Outside of EPA CLP QC limits.

Semivolatiles by GC/MS, Special List

Report Date: 06/12/03 11:13-

Page: 2a

Work Order: 11343606001

SBLKTK BS B16W90 SBLKTK Cust ID: B16W83 005 006 03LE0575-MB1 03LE0575-MB1 RFW#: Sample SOIL SOTE Information Matrix: SOIL SOIL 1.00 1.00 D.F.: 1.00 1.00 UG/KG UG/KG UG/KG Units: UG/KG 왛 Nitrobenzene-d5 78 옿 88 왐 76 옿 73 왐 왐 왍 82 ۶ ۲ 72 71 Surrogate 2-Fluorobiphenvl 74 Terphenyl-d14 93 왉 104 ¥ 86 8 92 ¥ Recovery Phenol-d5 75 ¥ 85 왐 77 % 73 ¥ ş. કૃ 66 ક્ષ 66 2-Fluorophenol 67 74 ş. 77 67 Ŷ. 71 66 2,4,6-Tribromophenol 350 U 350 II 330 U 70 Ł Phenol bis(2-Chloroethyl)ether____ 350 U 350 U 330 U 330 U 2-Chlorophenol 350 U 350 U 330 U 65 ş. 330 U 330 U 1,3-Dichlorobenzene_ 350 U 350 U 1,4-Dichlorobenzene_____ 350 U 350 U 330 U 66 ¥ 1,2-Dichlorobenzene_____ 350 U 350 U 330 U 330 U 330 U 330 IJ 2-Methylphenol 350 U 350 U 2,2'-oxybis(1-Chloropropane) 350 U 330 U 330 Ū 350 U 3- and/or 4-Methylphenol____ 350 U 350 U 330 U 330 U N-Nitroso-di-n-propylamine 330 U 69 ¥ 350 U 350 U Hexachloroethane_____ 350 U 330 U 330 U 350 U Nitrobenzene_____ 330 U 350 U 350 U 330 U 350 U 350 U 330 U 330 U Isophorone_____ 2-Nitrophenol_____ 350 U 350 U 330 U 330 U 2,4-Dimethylphenol_____ 330 U 330 U 350 U 350 U bis (2-Chloroethoxy) methane _____ 330 U 350 U 350 U 330 U 2,4-Dichlorophenol 350 U 350 U 330 U 330 U 1,2,4-Trichlorobenzene ____ 350 U 350 U 330 U 68 ¥ 350 U 350 U 330 U 330 U Naphthalene 350 U 4-Chloroaniline 350 U 330 U 330 U Hexachlorobutadiene _____ 350 U 350 U 330 U 330 U 4-Chloro-3-methylphenol_____ 350 U 350 U 330 U 68 왐 2-Methylnaphthalene_____ 350 U 350 U 330 U 330 U Hexachlorocyclopentadiene____ 350 U 350 U 330 U 330 U 2,4,6-Trichlorophenol____ 350 U 350 U 330 U 330 U 880 U 870 U 830 U 830 U 2,4,5-Trichlorophenol

RFW Batch Number: 0305L329 Cust ID:	Client: B16W83		B16W90		SBLKTK		SBLKTK BS			4
RFW#:	005		006		03LE0575-M	B1	03LE0575-M	B 1		
2-Chloronaphthalene	350	Ū	350	U	330	U	330	Ū	 	<u></u> _
2-Nitroaniline	880	U	870	U	830	U	830	U		
Dimethylphthalate	350	υ	350	U	330	U	·330	U		
Acenaphthylene		U	350	U	330	U	330	U		
2,6-Dinitrotoluene	350	U	350	U	330	Ū	330	U		
3-Nitroaniline	880	U	870	U	830	U	830	U		
Acenaphthene	350	U	350	Ū	330	Ū	68	ક		
2,4-Dinitrophenol	880	U	870	U	830	U	830	U ·		
4-Nitrophenol	880	Ū	870	U	830	U	79	*		
Dibenzofuran		U	350	U	330	บ	330	U		
2,4-Dinitrotoluene		Ū	350		330	U	83	४		
Diethylphthalate	350	Ū	350	U	330	U	330	U		
4-Chlorophenyl-phenylether		U	350	U	330	Ū	330	U		
Fluorene		U	350	U	330	U	330	U		
4-Nitroaniline	880	Ū	870	U	830	U	830	ប		
4,6-Dinitro-2-methylphenol	880	Ū	870	U	830	υ	830	U		
N-Nitrosodiphenylamine (1)	350	U	350	U	330	U	330	ΰ		
4-Bromophenyl-phenylether	350	U	350	Ū	330	Ū	330	บ		
Hexachlorobenzene	350	U	350	Ŭ	330	U	330	ប		
Pentachlorophenol	880	U	870	Ū	830	U	82	윻		
Phenanthrene		U	350	Ű	330	Ū	330	บ		
Anthracene		U	350	Ų	330	U	330	U		
Carbazole		U	350	U	330	U	330	U		
Di-n-butylphthalate	350	U	350	U	330	Ŭ	330	U		
Fluoranthene		U	350	Ŭ	330	U	330	U		
Pyrene		Ū	350	U	330	U	81	૪		
Butylbenzylphthalate	350	U	350	U	330	Ū	330	Ü		
3,3'-Dichlorobenzidine	350	U	350	U	330	Ū	330	U		
Benzo (a) anthracene		U	350	U	330	Ū	330	U		
Chrysene		U	350	U	330	U	330	U		
bis(2-Ethylhexyl)phthalate	350	U	350	U	330	U	51	J		
Di-n-octyl phthalate	350	U	350	U	330	U	330	U		
Benzo(b)fluoranthene	350	U	350	U	330	U	330	U		
Benzo(k)fluoranthene		U	350	U	330	Ü	330	U		
Benzo(a)pyrene		U	350	U	330	U	330	U		
Indeno(1,2,3-cd)pyrene	350	U	350	U	330	U	330	U		
Dibenz(a,h)anthracene	350	U	350	U	330	U	330	U		
Benzo(g,h,i)perylene	350	U	350	U	330	U	330	O.		
2-Butoxyethanol		Ū	350	U	330	U	330	U		
Benzyl alcohol	350	U	350	U	330	Ū	330	U		
*= Outside of EPA CLP QC limits.										

RFW Batch Number: 0305L3	29	Client: TNUHA	NFORD F03-00	6 H2194 Wo	ork Order: 11343606001	Page: 2c
	Cust ID:	B16W83	B16W90	SBLKTK	SBLKTK BS	=======================================
	RFW#:	005	006	03LE0575-MB	1 03LE0575-MB1	
Tributylphosphate		350 U	350 U	330 [J 330 U	
(1) - Cannot be separate	ed from Diph	enylamine. *=	Outside of	EPA CLP QC 1:	imits.	

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

	 	
B16W79		

CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

GPC Cleanup: (Y/N) N

Lab Sample ID: 0305L329-001 Matrix: (soil/water) SOIL

Sample wt/vol: 30.0 (g/mL) \underline{G} Lab File ID: $\underline{D060720}$

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: $\underline{}$ decanted: (Y/N)Date Extracted: 05/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: <u>06/07/03</u>

Injection Volume: 2.0(uL) Dilution Factor: 1.00

pH: <u>7.0</u>

CONCENTRATION UNITS: Number TICs found: 3 (ug/L or ug/Kg) UG/KG

CAS NUMBER COMPOUND NAME EST. CONC. RT-------

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

,	
B16W80	

CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL Lab Sample ID: 0305L329-002

Sample wt/vol: 30.0 (g/mL) \underline{G} Lab File ID: $\underline{D060721}$

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: ____4 decanted: (Y/N)___ Date Extracted: 05/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/07/03

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) <u>N</u> pH: $\underline{7.0}$ CONCENTRATION UNITS:

Number TICs found: 2 (ug/L or ug/Kg) UG/KG

I	<u> </u>	<u> </u>		
CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	=======================================	======	=========	=====
1.	ALDOL CONDENSATE	3.539	200	JAB
2.	ALDOL CONDENSATE	4.122	20000	JAB

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

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B16W81				

CLIENT SAMPLE NO.

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL Lab Sample ID: 0305L329-003

Sample wt/vol: 30.0 (g/mL) \underline{G} Lab File ID: $\underline{D060724}$

Level: (low/med) <u>LOW</u> Date Received: <u>05/02/03</u>

% Moisture: ____4 decanted: (Y/N)__ Date Extracted: 05/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/07/03

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	
		======	EDI. CONC.	\
1.	UNKNOWN	3.178	100	J
2.	ALDOL CONDENSATE	3.543	100	JAB
3.	ALDOL CONDENSATE	4.143	30000	JAB
\	İ	l		i i

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT	SAMPLE	NO.	

B16W82		
I		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL Lab Sample ID: 0305L329-004

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D060725

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: ____6 decanted: (Y/N)__ Date Extracted: 05/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/07/03

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) <u>N</u> pH: $\underline{7.0}$ CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	 Q
		======		- 1
1.	UNKNOWN	3.182	10	o J
2.	ALDOL CONDENSATE	3.556	20	JAB
3.	ALDOL CONDENSATE	4.130	3000	JAB
1				i i

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

B16W83			
1			

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) SOIL Lab Sample ID: 0305L329-005

Sample wt/vol: 30.0 (g/mL) \underline{G} Lab File ID: $\underline{D060804}$

Level: (low/med) <u>LOW</u> Date Received: <u>05/02/03</u>

% Moisture: ____5 decanted: (Y/N)__ Date Extracted: 05/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/08/03

Injection Volume: 2.0 (uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) N pH: $\underline{7.0}$ CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) $\underline{\text{UG/KG}}$

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
2.	UNKNOWN ALDOL CONDENSATE ALDOL CONDENSATE	3.175 3.549 4.123	300 200 20000	JAB

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

1		
B16W90		
ı		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) <u>SOIL</u> Lab Sample ID: <u>0305L329-006</u>

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D060805

Level: (low/med) LOW Date Received: 05/02/03

% Moisture: $\underline{}$ decanted: (Y/N) Date Extracted: $\underline{05/14/03}$

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 06/08/03

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) <u>N</u> pH: $\underline{7.0}$ CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) UG/KG

		1			
-	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	l Q
			*****		=====
	1.	UNKNOWN	3.177	200	J
	2.	ALDOL CONDENSATE	3.551	300	JAB
1	3.	ALDOL CONDENSATE	4.160	30000	JAB
1				l	į

1 F

CLIENT SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

	-	
SBLKTK		

Lab Name: Lionville Labs, Inc. Work Order: 11343606001

Client: TNUHANFORD F03-006 H2194

Matrix: (soil/water) <u>SOIL</u> Lab Sample ID: <u>03LE0575-MB1</u>

Sample wt/vol: 30.0 (g/mL) G Lab File ID: D060718

Level: (low/med) Low Date Received: 05/14/03

% Moisture: ____ decanted: (Y/N)__ Date Extracted: 05/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 06/07/03

Injection Volume: 2.0(uL) Dilution Factor: 1.00

GPC Cleanup: (Y/N) <u>N</u> pH: 7.0 CONCENTRATION UNITS:

Number TICs found: 3 (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
=======================================		======		
1.	ALDOL CONDENSATE	3.543	200	JA
2.	ALDOL CONDENSATE	4.125	20000	JA
3.	UNKNOWN	21.471	80	J
1				

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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Date Rec'd	50	203		Date Due		-	sheles		ESTED		δ Š	BNA	Pest/ PCB	Herb		ĺ	- 1	Metal	8		1			! [
Date Nec u		T	 _	Date Due _										<u> </u>	<u></u> -	Lionvi	lle Lab		y Use (Only	,1				L
MATRIX CODES:	}	1				'	Matrix QC		}			,	-	T.						Ţ	N	7			
S - Soil	Lab	1	Clie	ent ID/Descri	ption	C	hosen (√)	Matrix	Date Collected	Time Collected	1		Heor	a K]]	ļ				الإ	2	5	,)]	
SE - Sediment SO - Solid		1				<u> </u>	· ·		})	}		13	DRAC) }		1			TCPC	エカろのと	ICGGR		ı	
SL - Sludge W - Water						MS	MSD	<u></u>	+		 	 	-0	٥	 - 		-+	-			•		-		
o-Oil	cor	BAG	وحدينا	=				5	145803	13560	 	-	 								~	~			
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Solids DL - Drum	ECC		8	<u> </u>			┵—	 - -	4-23-03	0745	 -	↓	 									┌╼┤		4	
Liquids	Day.		8	<u>a</u>					1-1	0300	<u> </u>	<u> </u>	ļ							<u>- </u>	لصا				
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Special Instruc			\sim				DATE	/REVISIO	NS: A					٠					Lie	onvil	le Labr	oratory	Use On	ily	==
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Sast	Foz	ᢃᢕᢕ	Q				Sa	mples	2.041 →	-006	Add	Ag	A1.3	B	B. B.	.61. (r. Cu,	1 1) S	Shipped nd Delive	<u> </u>	or		Present		
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Relinquishe	d	Rece	ived	Date	Time		uished	\top	Received		Date _	Ti	me	1	repanci			- F10	Peny Pi	Y) or	N		OC Reco		
by	by by by								by -						nples La C Recon				Received		ណ់	· ·		Y) or	r N
FedEx	N	0Vh	rulh.	5.2.03	0945	<u></u>	ORI	יאט	NL .	·		F			TES:			HOI	ding Tim	ies Y_∕or	r N	Te	ooler snp. <u> </u>	.3_	_•c
	$\neg \tau$	77		DCW	CWGITTE MASIE								941	3 3 :	207							ì			

				ODY/S	Telephone No. Project Coordinator						of 1		
Collector Johansen/Pope/Pfister			any Contact Hulstrom	Telepho 373-3				Project Coordin TRENT, SJ	ator	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU	- Borehole Soil Sampling	Sampl 216	ling Location -A-37 (C4106); (12.5'-15					SAF No. F03-006		Air Quality		45	Day D
Ice Chest No. ER C	96 054		Logbook No. F-N-3361		COA 117504E	ES10		Method of Ship Federal Expre		•			
Shipped To EDERLINE SERVICES (RECRA Formerly TMA)	V22/a 5 Offsite	e Property No. A	30	22	-0		Bill of Lading/	Air Biil N	6.5E	05P		
POSSIBLE SAMPLE HA		-7-2		[T	7				7	1	T	T
			Preservation	Coni 4C	Cnol 4C		Non						
Special Handling and/o	or Storage		Type of Container	aG	aG .	aG	аG	aG/	<u> </u>		 		
			No. of Container(s)	1	1	1 1	1	Ιζ,			1 .	1	
			Volume	120mL	60mL	120mL	60m	L 60mL					
	SAMPLE ANAL	YSIS		Chromium Hex - 7196	NO2/NO3 353.2	- Oil & Grease - 413.1	See item Speci Instructi	i/}					
							N.	1/2/					
Sample No.	Matrix *	Sample Date	Sample Time			ا نے میں سال ملی تاہی	<u>.</u>					[] 	
B16W79	SOIL	4/7.8/03	1358	7	4	1	<u>/</u>						
 											<u>i</u>		
CHAIN OF POSSESS		Sign/Prin			SPI	ECIAL INSTR	UCTIO		1240				Matrix *
Relinquished By/Removed From		Received By/Stor	ed in Da 3728 42803	te/Time 16 45				e a detection limit of			** The laborat	ory is to	S-Soil SE-Soditacet
Relinquished By/Removed From	Date/Time 1	- · · · · · ·	Da Da	te/Time		Technosium 90:	Strontium 2	-89 90 - Total Sr; Is	otonic The	orium (Thorium-2	1321: Carbon 1	4: lodine-	SO~Solid SI=Studge
REF 1A 372	1441/	SJ GA U	5/1/2/5/	03 11	00 125	9; Nickel-63; Nep	tunium-2	1 1gr 4	12/0	7	,,	,	W = Water O=Oil
Relinquished By/Removed From SJGALE A. La		Received By/Stor	edja Da	te/Time				, , ,					A=Air DS=Drum Solids
Relinquisted By/Removed From	Date/Time 5 1 03 0945	Received By Stor	ed In Da	te/Time	9:4	-							DL=Drum Liquids T=Tissue Wl=Wipe L=Liquid
Relinquished By/Removed From	Date/Time	Received By/Stor		te/Time		Personnel not relinquish sam Ref#or	availabl oples fro	e to m the 3728					V=Vegetation X=Other
Retinquished By/Removed From	Date/Time	Received By/Stor	ed in Da	te/Time		Ref # _ <i>11</i> 7 or	<u>. گ</u> . ،	1103					
LABORATORY Received	і Ву			Tit	le						D	ate/Time	
FINAL SAMPLE Disposal DISPOSITION	Method					Dispos	sed By					Date/Time	

FH-Centra	l Plateau P	roject	CI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST						F0	3-006-63	Page 1	of 1	
Collector Johansen/Pope/Pfi	ster		Comp:	any Contact Hulstrom	Telepho 373-3				Project Coording	nator	Price Code	8N	Data Tu	rnaround
Project Designation 200-PW-2/200-PV	V-4 OU - Boreho	ole Soil Sampling		ing Location -A-37 (C4106); (17.5'-20	D')				SAF No. F03-006		Air Quality		45]	Days 🧷
Ice Chest No.				Logbook No. F-N-3361		COA 117504ES	10		Method of Ship Federal Expre	SS				
Shipped To EDERLINE SERV	-	ELRA (TMA) - Agr 4/	22/03 Offsite	Property No.	403	020	20	·	Bill of Lading/	Air Bill N	10. 50E	0370		
POSSIBLE SAMP	LE HAZARDS	/REMARKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Non	e None					
0			•	Type of Container	aG	aG	aG	aG	24			 -		
Special Handling	g and/or Stora	ge		No. of Container(s)	1	i	1	1	7					
				Volume	120mL	60mL	120mL	60m	L 60mL					
		SAMPLE ANALY	SIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instructi	ù΄/]]					
Sample No).	Matrix *	Sample Date	Sample Time										
B16W80		SOIL	4/28/03	1510	7-	Υ.	X	\mathbb{Z}_{-}						
					<u> </u>	 		 						
 					 	 -							<u> </u>	
<u></u>														
CHAIN OF PO		Date/Time /645	Sign/Print		ite/Time		IAL INSTR		NS • a detection limit o	1 87 150.0 oci			ry is to	Matrix *
Relinquished By/Remove Relinquished By/Remove	3728 5	Date/Time 103 1100	REF IA Received By/Stor	3728 42803 ed in Da 1/14 5 1	16 45 ate/Time 03 110	(i) I	both kerosene	and diese Strontium	el range compounds : 1-89-90 — Total Sr . li	from WTP. sotopic Th	H-D analysis.			S=Soil SE=Sediment SO=Solid SI=Sludge W = Water O=Oil A=Air
Relinquished By/Remove	My	205103	FED	ё×										DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed from Date/Time Received By/Stored In				ate/Time -03 09	7.3	ersonnel no	امائست	ala to					WI=Wipe L≠Liquid V=Veget#ion	
Relinquished By/Removed From Date/Time Received By/Stored In Di				te/Time	re	elinquish sar	nples_fr	om the 3728					X=Other	
Relinquished By/Removed From Date/Time Received By/Stored In Date				te/Time		ce1# <u>/ / 1 _</u> 0	н <u> </u>	11103		_				
LABORATORY SECTION	Received By				Tit	le						Di	te/Time	
FINAL SAMPLE DISPOSITION	Disposal Method						Dispos	sed By				D	ate/Time	

FH-Central	Plateau Project	CI	HAIN OF CUST	ODY/S	AMPLE	ANAL	YSIS	REQUEST		F03	3-006-64	Page 1	of 1
Collector Johansen/Pope/Pfiste		Compa	nny Contact Hulstrom	Telephor 373-3	ae No.			Project Coordin TRENT, SJ	etor !	Price Code	8N		naround
Project Designation	4 OU - Borchole Soil Sampling		ing Location -A-37 (C4106); (27.5'-30					SAF No. F03-006	I	Air Quality		45]	Days (
Ice Chest No. ER	c 96 056		Logbook No. F-N-3361		COA 117504ES	10		Method of Ships Federal Expres					
Shinned To	RECRA GES (Formerly TMA) ASSA 41	Offsite	Property No.	030	12	9		Bill of Lading/A	ir Bill N	". 30E	037		
	E HAZARDS/REMARKS	ayos.		ļ	ļ	[
		!	Preservation	Cool 4C	Cool 4C	Cool 4C	Non	e None			<u> </u>		
Sanial Haadiina a	andle a Steware		Type of Container	aG	aG	aG	aG	<i>3</i> 6			<u> </u>		
Special Handling a	inmot Storage		No. of Container(s)	1	1	ì	i	71					
			Volume	120mL	60mL	120mL	60m	1. 60mL					
}			L <u></u>	Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease -	See item				1		
	SAMPLE ANALYS	SIS			İ	ł	Instruct	7ms. 133,					
				}			18/			}	TILTO		
Sample No.	Matrix *	Sample Date	Sample Time						alesta (f. 16		1100		
B16W81	SOIL	4/29/03		X	1	K	/				Bluw	57/11	S(F)
		40,465			1					1			
											<u> </u>	<u> </u>	
CHAIN OF POS		Sign/Print			SPEC	LAL INSTR	EUCTIC	ONS 1800	4/22/		** The laborate	orv is to	Matrix *
Municipal By/Reflect	Form 6 4) 9103 1400	Received By/Stor	Rachiber 4	541631	16/) report	both kerosene	and dies	el range compounds i	rom WTPI	I-D analysis.		,	S=Soil SE=Sodiene;e SO=Solid
Relinquished By/Removed	From Date/Time 14	Received By/Stor	ed In			echnetium 99, Nickel-63: Net		1-89,98 - Total Sr; I:		1	232) , Carbon 1	4; lodine-	SI=Studge W = Waler
Relinquished By/Removed		Received By/Stor		te/Time				184	4/22	J ⁰ 3			O-Oil A-Air
	5103 1100	SJGA	Which	2 102	1106								DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed SJGALL JUNCL	From Date/Time 1100	Received By/Stor	<u>ex</u>	nte/Time									W)=Wipe L=Liquid V=Vegetation
Relinquished By/Removed	From Date/Time	Received By/Stor	And the	nte/Time 03 de/y	(re)	rsonnel not inquish sam	nles fro	m +6 - 7990					X=Other
Relinquished By/Removed		Received By/Stor		ite/Time	Re	£# /_£ _on	5	1 /03					
LABORATORY ROSECTION	eccived By			Ti	tie						D	Pate/Time	
	Disposal Method	- <u></u> -				Dispo	sed By				í	Date/Time	-

FH-Central Platea	u Project	CI	IAIN OF CUST	ODY/S	AMPLE	ANAL	YSIS	REQUEST	F03	3-006-65	Page <u>1</u>	of 1
Collector Johansen/Pope/Pfister		Compa	iny Contact Julstrom	Telepho 373-3	ne No.			Project Coordinator TRENT, SJ	Price Code	8N		naroupd
Project Designation 200-PW-2/200-PW-4 OU - Be	orehole Soil Sampling		ing Location -A-37 (C4106); (37.5'-40	າງ				SAF No. F03-006	Air Quality		45 I	Days
Ice Chest No. ER C 9.6	055		Logbook No. F-N-3361		COA 117504ES	10		Method of Shipment Federal Express			·	
Shipped To EBERLINE SERVICES (For	ECRA 18m	Offsite	Property No.	030	220)		Bill of Lading/Air B	ill No. 562	OSPC		, -
POSSIBLE SAMPLE HAZA	RDS/REMARKS 17 7		Preservation	Cool 4C	Cool 4C	Coal 4C	Noc	ne None				
Special Handling and/or S	torage	ļ	Type of Container	a.G	aG	аG	aG	a				
	···-Pa		No. of Container(s)	1	<u>'</u>	1	1					ļ
		ļ	Volume	120mL	60mL	120mL	60m	aL 60mL	l			
	SAMPLE ANALYS	SIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instruct	ial /		Tieto:		
Sample No.	Matrix *	Sample Date	Sample Time							111010		
B16W82	SOIL	4/29/0	3 0900	X	1	7	/			BIGWA	8 (W	SCF)
				 -	 					 		<u> </u>
				}	 	}	 			 		
												
CHAIN OF POSSESSIO Retiremished By/Removed From Retinquished By/Removed From 15 3728 5 1 C Retinquished By/Removed From 5 16 ALC Moles 5 Retinquished By/Removed From Retinquished By/Removed From LABORATORY SECTION Received By	Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time	Received By/Stor Received By/Stor SUGALE Received By/Stor Received By/Stor	ed in E 2 Da R F= hft Y ed in Da 3 2 2 8 L ed in Da in M5103 Da od in Da od in Da od in Da	ate/Time ate/Time ate/Time	repor (1)-1 129;	echnenum 99; Nickel 63; Ner ersonnel not elinquish san ef # 18 o	s to achie e and dies Strontium-2 tavailat uples fr	ve a detection limit of 30.0 set range compounds from \\ n-89,90 = Total Sr, Isotopi 337	WTPH-D analysis.	232}, Carbon 1 4		Matrix * S-Soil SE-Sotimen SO-Solid SI-Sludge W = Water O-Oil A-Air DS-Drum Solids DJ-Drum Liquids T-Tissue WI-Wipe L-Liquid V-Vegetation X-Other
FINAL SAMPLE Disposal Me DISPOSITION	ethod					Dispo	sed By	· .			ofer 1 mic	

FH-Central Platea	u Project	Ci	HAIN OF CUST	ODY/S	SAMPL	E ANAL	YSIS	REQUEST		F03	3-006-66	Page 1	of <u>1</u>
Collector Johansen/Pope/Pfister		Comp	ny Contact Hulstrom	Telepho 373-3	ne No.			Project Coordi TRENT, SJ		Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling		ing Location -A-37 (C4106); (47.5'-50	מ)				SAF No. F03-006		Air Quality		45	Days 🤇
Ice Chest No. ERC 9	6 056		Logbook No. F-N-3361		COA 117504E	S10		Method of Ship Federal Expre	SS				
Shipped To EBERLINE SERVICES (Fon	ETRA MENY THAN OF W	Offsite	Property No.	30	220			Bill of Lading/	Air Bill I	No. 5EE	OSPC	·	
POSSIBLE SAMPLE HAZA	RDS/REMARKS	/ /		}									
•			Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	None /					
6	.		Type of Container	aG	аG	aG.	aG	aG/					
Special Handling and/or S	torage		No. of Container(s)	1	1	ì	ì						
			Volume	120mL	60mL	120mL	60m	i. 60mL					
	SAMPLE ANALY	SIS		Chromius Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instruct	ai /(
							N	1/4		TIETO:			
Sample No.	Matrix *	Sample Date	Sample Time										
B16W83	SOIL	4/24/03	1020	1	1 7	<i>+</i>	<u>/</u>			BIGUE	9 (W	(F)	ļ
 				}	 								
						+					 		
						-{						 -	
CHAIN OF POSSESSIO	N	Sign/Prin	t Names	'	SPE	CIAL INSTR	UCTIO	ONS A	je	4/24/83		<u></u>	Matrix *
Relinquished By/Removed From Relinquished By/Removed From	Date Time 1314	Received By/Sto	Rfee U	19/1/3 / Le/Time	(1)-	Technetium-99;	and dies	el range compounds n-89,90 - Total Sr;	from WTI sotopic Th	PH-D analysis.	** The laborate	·	S-Soli SE-Sediment SO-Solid Si-Sludge W = Water
Relinquished By/Removed From Relinquished By/Removed From 1 3 3728 5 1 0	-Date/Time	Received By/Stor SJ GALE	ed in D	19 - 6 ate/Time 03 1	100	; Nickel-63; Nep	(tut)(tut-2	9	gi	4/22/63			O=Oil A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From Date/Time Received By/Stored In SUGALE MACH 5 1 03 1100 FED EX				ate/Time		Per	rsonnel	not available to					T=Tissue W1=Wipc L=Laguid V=Vegetation X=Other
Relinquished By/Removed From Relinquished By/Removed From	Date/Time Date/Time	Received By/Stor	Mills 50	1-03 05 ne/Time	41	reli Ref	nquish F# L Z	samples from the	e 3728 _/				}
LABORATORY Received By SECTION		<u> </u>		T	itle	- 					D	ate/Time	<u>.L</u>
FINAL SAMPLE Disposal Me	rthod					Dispo	sed By				E	Pate/Time	

												T	 _
FH-Centra	l Plateau Project	_	HAIN OF CUST	ODY/S	AMPLE	CANAL	<u>YSIS</u>	REQUEST	<u> </u>	F0:	3-006-73	Page 1	ot A
Collector Johansen/Pope/Pfi	ster		any Contact Hulstrom	Telepho 373-3				Project Coordi TRENT, SJ	nator	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PV	V-4 OU - Borehole Soil Samplin	Samp 210	ling Location -A-37 (C4106); (17.5'-20	י)				SAF No. F03-006		Air Quality	v 🗆	45	Days
Ice Chest No. ER	C 96 056		Logbook No. F-N-3361		COA 117504ES	10		Method of Ship Federal Expre	ment :ss				
Shipped To	RECRA 98 HCES (Formerly TMA) 41	Offsie	e Property No. A	30	220			Bilt of Lading/	Air Bill N	6.58E 0	ے م دا		
	LE HAZARDS/REMARKS		[[7	1		•	7		1	T	[
			Preservation	Cool 4C	Cool 4C	Cool 4C	Non	e None					
Special Handling	and/or Storage		Type of Container	aG	aG	aG-	aG	ad/					
-	· · · · · · · · · · · · · · · · · · ·		No. of Container(s)	1	<u> </u>	1	11		<u> </u>		1		
			Volume	120mL	60mL	120mL	60m	L 60mL					
	SAMPLE ANALYSIS Sample No. Matrix * Sample Da			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Gresse - 413.1	See item Speci Instructi	ai / ,					
Sample No	o, Matrix *	Sample Date	Sample Time								Art States		7.79
B16W90	SOIL	4/28/03	1510	X	X	*	7		Sans 11 France Make 1 To come				
					<u> </u>	<u> </u>						 	
		 			 							<u> </u>	
CHAIN OF P	OSSESSION	Sign/Prin	t Names		SPEC	CIAL INSTR	UCTIC	NS 6	15/2	4/22/03	<u> </u>	<u> </u>	Matrix *
Relinquished Dy/Remov		Received By/Sto		te/Time	As T	ie laboratory is	to subject	e a detection fimit o	250.0 PCV	PIOT CAPBOR-14.	** The laborat	ory is to	S=Soil
Gres Ilong		REF IA	3728 42803	164	5 report	t both kerosene	and diese	el range compounds	from W1Pi	H-D analysis.			SE=Sedigeont SO=Solid
Relinquished By/Remov	ed From Date/Time	Received By/Sto	······· //	te/Time	41)_1	echostium 99;	Suonium	: 89,90 — Total Sr; I	sotopic The	, ,	232); Carbou-l	4: Indine:	SI=Sludge W = Water
REF IA		O SUGAL		03 110	00 1297	Micrei-03; Inch	minni-3	31_ Jq1	4/22	(")			O=Oil A=Air
Relinquished By/Remoy	Sel- 5/03 11) EX	te/Time									DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Remove	ed From Date/Time 5 2 03 094	Received By/S/o		te/Time - <u>3 09</u> -	41								WI=Wipe L=Liquid V=Vegetation
Relinquished By/Remove	ed From Date/Time	Received By/Sto	ed in Da	te/Time		Personnel n	ot avail samples	lable to from the 3728 5_1_1_1_03			•		X=Other
Relinquished By/Remove	ed From Date/Time	Received By/Sto	ed in Da	te/Time		Ref # //	_on _ 2	<u> </u>					
LABORATORY SECTION	Received By	-, -, -, -, -, -,		Tú	ie						D	ate/Time	
FINAL SAMPLE DISPOSITION	SECTION NAL SAMPLE Disposal Method					Dispos	sed By					Date/Time	

FH-Central Plateau	Project	CH	IAIN OF CUST	ODY/S	SAMPLE	ANALY	YSIS	REQUES	Γ	F0	3-006-74	1,480 7	
Collector Johansen/Pope/Pfister		Compa	ny Contact Iulstrom	Telepho 373-3	ne No.			Project Coord TRENT, SJ		Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - Bore	hole Soil Sampling	Sampli 216	ing Location A-37 (C4106); (0.5')					SAF No. F03-006		Air Quality	<u>'</u>	45 !	Days C
Ice Chest No. ERC 96	056	Field I HNI	Logbook No. F-N-3361		COA 117504ES	10		Method of Shi Federal Exp	CSS	'			
Shipped To Shipped To EBERLINE SERVICES (Forms	os ITECRA	Offsite	Property No. AO	30 Z	20	· · · · · · · · · · · · · · · · · · ·		Bill of Lading	/Air Bill	[№] .5&&	05/20	<u>. </u>	·
POSSIBLE SAMPLE HAZARI	DS/REMARKS				}	}		}				1	
		!	Preservation	Cool 4C	Cool 4C		1		}				
Special Handling and/or Stor	rage		Type of Container	aG	aG								
			No. of Container(s)	1	,	ļ				 	,	}	
			Volume	60mL	250mL								
	SAMPLE ANALYS	sis		Pesticides - 808 I	Chloro- Herbicides - EPA8151								
Sample No.	Matrix *	Sample Date	Sample Time					gi ta piki sin ka gin	Average of the second				
B16W91		1/2/8/02	130	X	X				and 2			.i <u></u>	
		11-21-2			 				1		 		
 					 				1				
 		 			 				 		1	 	
 -					+				†		 	 	
CHAIN OF POSSESSION		Sign/Print	Names	L	SPEC	LAL INSTR	UCTIO	DNS					Matrix *
Relinquished By/Removed From	Date/Time /145	Received By/Stor		ate/Time									S=Soil SE=Sedimen
Relinquished By/Removed From	Date/Time	Received By/Store	ed In Da	ate/Time	}								SO=Solid SI=Studge
REF 1A 3728 5	103 1100	SJGALO			00								W = Walkr O=Oil A=Air
Relinquished By/Removed From S. FALT M. July 5		Received By/Stof	ed In Di	ne/Time	ł								DS=Drum Solids DL=Drum Liquids
Relinquished By Removed From		Received By/Stor		nte/Time									T=Tissue WI=Wipe
H.J.E.	5.2.03 0745	1 22/	mil 50	<u>-03 C</u>	375	Personnel M	ot availi	from the 3728	2				l,=Liquid V=Vcg≤tation
Relinquished By/Removed From	Date/Time	Received By/State	ed la Di	ate/Time	ł	relinquish s	ampics on _S	سعدلسل لسأ					X=Other
Relinquished By/Removed From	Date/Time	Received By/Store	ed in Di	ate/Time		Ref# LI		from the 3728					
LABORATORY Received By SECTION		/ 		T	itle					· ·	ī	Date/Time	
FINAL SAMPLE Disposal Methodisposition	od					Dispo	sed By					Date/Time	

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

IENT: TNU Hamford

chase Order/Project:

DATE: 5-2-03

F#Y SOW# / Release #: FO 3-006

boratory SDG #:

03051329

	00000027				
TE:	ALL ENTRIES MARKED "NO" MUST BE F	EXPLAINED IN	THE COMM	ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	D №	D N/A	See Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes .	□ N ₀	D N/A	See Comment#
3.	Airbill # recorded?	Yes	D No	□ N/A	☐ see Comment#
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	DYYes	[] No	D N/A	D see Comment#
5.	Sample containers are intact?	`` \ \Y\	DNo	D N/A	D see Comment #
6.	Custody seals on sample containers intact, signed and dated?	Ty Yes	□ No	DNA	☐ see Comment #
7.	All samples on coc received?	D'Yes	□ No	DNA	· D see Comment #
8.	All sample label information matches coc?	D/Yes	D No	D N/A	D see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	D No	DNA	D see Comment #
10	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	by Yes	□ No	A/N C	□ see Comment #
11	. Where applicable, bar code labels are affixed to coc?	□ Yes	□ No	DONIA	☐ see Comment #
12	. coc signed and dated?	Yes	□ No	DNA	D see Comment #
13	. coc will be faxed or emailed to client?	B Yes	□ No	D N/A	D see Comment #
14	. Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	, D No	MINIA	D see Comment #

Cooler # / temp (°C) and Comments:

Elc 96-056 / 1.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dynwin

27

Lionville Laboratory, Inc. HBGX ANALYTICAL DATA PACKAGE FOR TNU-HANFORD F03-006 #2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL	#	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
							
B16W91	007		S	03LE0531	04/28/03	05/05/03	05/07/03
B16 W 91	007	MS	S	03LE0531	04/28/03	05/05/03	05/07/03
B16W91	007	MSD	S	03LE0531	04/28/03	05/05/03	05/07/03
LAB QC:							
PBLKSR	MB1		s	03LE0531	N/A	05/05/03	05/07/03
PBLKSR	MB1	BS	S	03LE0531	N/A	05/05/03	05/07/03
PBLKSR	MB1	BSD	S	03LE0531	N/A	05/05/03	05/07/03



ger fits



Analytical Report

Client: TNU HANFORD F03-006

LVL#: 0305L329

SDG/SAF#: H2194/F03-006

W.O.#: 11343-606-001-9999-00

Date Received: 05-02-03

HERBICIDE

One (1) soil sample was collected on 04-28-03.

The sample and its associated QC samples were extracted on 05-05-03 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-07-03. The extraction and analysis procedure was based on method 8151A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
- 2. All required holding times for extraction and analysis have been met.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. All blank spike recoveries were within acceptance criteria.
- 6. Four (4) of sixteen (16) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. To the best of my knowledge, this data report is in compliance with the terms and conditions of the purchase order, both technically and for completeness, for other than the conditions detailed in the case narrative. Release of the data contained in this hard copy data package and in the electronic data submitted on diskette has been authorized by the cognizant laboratory manager or his/her designee to be accurate as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

pef\7somr;\group\data\herb\\tnu\04L-329.doc

05-16-03

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of pages.

Lionville Laboratory	Sample Discrepancy Repor	SDR#: 0366130
initiator: John Lank.	Batch: 0705L324	Parameter: <u> </u>
Initiator: John Lack. Date: 5/5/03	Samples:	Matrix: So.
Client: TNU	Method: <u>sw846/MCAWW/CLP/</u>	Prep Batch: 03 LE 0531
1. Reason for SDR		Si 5 0.0.0
a. COC Discrepancy Tech Pro	file Error Client Request stion Error Wrong Test Code sti	Sampler Error on C-O-C Other
b. General Discrepancy		
Missing Sample/Extract (Container Broken Wrong S	Sample Pulled Label ID's Illegible
Hold Time Exceeded Improper Bottle Type N	nsufficient Sample Preserva Not Amenable to Analysis	ation Wrong Received Past Hold
1	circle)signature/date:	•
	cific results; attach data if necessary)	
ms D Low to 4 compe		•
My D Are		
2. Known or Probable Causes(s)		
	•	·
3. Discussion and Proposed Action	n Other Description:	
Re-log	Narett. ms, a B	S (newsys). No hits
Entire Batch Following Samples:		
Re-leach		
Re-extract Re-digest	\bigwedge	
Revise EDD		
Change Test Code to _ Place On/Take Off Hold (circle)	$ \bigcirc$	
4. Project Manager Instructionssi	angly of data: Value 3/	12/13
Concur with Proposed Action	griature/date.	
 Disagree with Proposed Action; Include in Case Narrative 	See Instruction	
Client Contacted:		
Date/Person		
Add Cancel		
5. Final Actionsignature/date:	SIN/QOther Expla	anation:
Verified re-[log][leach][extract][d		
☐ Included in Case Narrative ☐ Hard Copy COC Revised		
Electronic COC Revised		
EDD Corrections Completed		
When Final Action has been record	ded, forward original to QA Specialist f	or distribution and filing.
Route Distribution of Completed SD		ution of <u>Completed</u> SDR
X Initiator X Lab General Manager: M		als: Beegle ganic: Perrone
X Project Mgr: Stone/Johnson	on/Haslett GC/	/LC: Kiger
XTechnical Mgr: Wesson/D XQA (file)		: Rychlak/Layman -in: Melnic
Data Management: Feldm	nan Adn	nin: Soos
Sample Prep: Beegle/Kige	er Oth	er:



GLOSSARY OF HERBICIDE DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF HERBICIDE DATA

- This flag is used for an Herbicide target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- D = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by HPLC.

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Report Date: 05/09/03 15:59

Lionville Laboratory, Inc.

Herbicides, Special List

RFW Batch Number: 0305L329 Client: TNU-HANFORD F03-006 Work Order: 11343606001 Page: 1

	Cust ID:	B16W91		B16W91	L	B16W9	1	PBLKSR		PBLKSR BS		PBLKSR BSI	D
Sample	RFW#:	007		007 MS	3	007 MS		03LE0531-M	в1	03LE0531-) SOIL	œ1	03LE0531-1 SOIL	
Information	Matrix: D.F.: Units:	SOIL 1.00 ug/kg		SOIL 1.(ug/)		SOIL 1. ug/	00	SOIL 1.0 ug/k		1.(ug/)		1.: ug/l	00
Surrogate:	DCAA	63 %	<u> </u>	88	*	49	¥	84	*	70	* 63	92	
Dalapon		180 T	fl==== }	 73	==fl== %	58	==fl %	======================================	A TT=		% ==I1	======================================	* ==TT
Dicamba		72 T	-	83	¥		* %	67	U	60	ક	89	8
Dichloroprop	·	180 T	-	76	%		* % %	170 33	U U	65 61	% %	86 78	% %
2,4-D 2,4,5-TP (Silvex)		36 U 18 U	ת ח	65 71	% %	46 65	8	17	Ū	66	8	81	*
2,4,5-T			Ū	70	*		* %	17	U	64	કૃ o.	82	8
2,4-DB Dinoseb			n n	72 75	એ એ	44 70	* *	170 17	U	60 74	જ જ	82 84	એ એ



U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Labor	atory	Use Only	Cus	tody Ti	ranster i	tec:	OLA\F	au i	I¥ U	ł N	: 1U	44	··	, ago	<u>.</u>				
0305	5L3	29	1	-	PERSONNEL: C						;	В					C '		F UG	VILLE LABO	ORATOK) I	
ClientT	<u>ښ</u>	Hans	and En	~~~~°		Refrige	rator#				5	al		7			al	a	5			7
Est. Final Pro			_	_		#Tuna	Container	Liquid														
Project # 11.	•	• -						Solid			IPG	اعكا					1961	186	180			_
Project Conta						Volume		Liquid			}											_
Lionville Labo	oratory	Project	Manager 🔘	2				Solid	<u> </u>		(10)	සිය		}			190	Ca \	190			_
30C 30	=	Dei	DIO TA	<u>m_30d</u>	oct	Preser	vatives	ــــــــــــــــــــــــــــــــــــــ		ORG.	ANIC				INC	ORG		- -	-			
Date Rec'd	-ನ್ನ	203	Date E	Due <i>Co-</i> 1-	ン o3	REQUE		-	δ V		Pest/ PCB	Herb			Metal	S						
				 	Matrix		1	 				Ţ	L	ionville La	<u>. </u>	ory Us	e Only	<u>'</u>	1		<u>_</u>	\exists
MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge	Lab ID		Client ID/C	Description	GC Chasen (V)	Matrix	Date Collected	Time Collected			H 8000	DHBGK					ICRO	Inana	TOGGR			
W - Water O - Oil	COL	BVO	9تىن			S	5085 M	13540									~	<u>~</u>				
A - Air DS - Drum	œ		8o				1	1510							<u> </u>			سيند	10			
Solids DL - Drum	202	i i	81				K0F514	0745							<u> </u>			_				_
Liquids L EP/TCLP	2024	3 1	98	,			1_1_	0900				-					_		_			_
Leachate	005		83				1 1	1020							<u> </u>		_					_
X - Other	200	1 1	90				42863	1210							<u> </u>	<u> </u>		_				_
F - Fish	2007	, ,	91				1	1130			_	/			<u> </u>	<u> </u>						
							<u> </u>								 	<u> </u>	<u> </u>	<u> </u>			\dashv	
										<u> </u>		 		·	<u> </u>	<u> </u>	<u> </u>	<u> </u>				
						<u> </u>		<u> </u>	<u> </u>	<u> </u>					<u></u> _	<u> </u>		<u> </u>				
Special Instruct	tions:	Pun	Matrix	QC.	DATE	/REVISIO	NS:								<u> </u>		Lionvi	le Lab	<u>`</u>	Use On		
505#	Fo:	300(P				2 3								- (1) H. Ai - (×2)	amples Shippe and Del irbill # Ambier Receiv	ed <u>V</u> livered Velu nt or el		1) Pa 2) Pa	nper Resist Present ckage Unbroke ckage Present	on Oute P or N In on Out P or N	iter V
			l 				6								- C	ondition Sample roperty	(Ƴ) o es Preserv	r N ved	Sa	Unbrokei mple (Y DC Recoi	or N	
Relinquished by	,	Recei by	1 1/18	ite Time	Relinquished by		Received by	20: 20	ate .	Tin	»е	Sam	pies Lab	Between els and Y or N) Receiv			Up	on Samp	ple Rec't	t N
FedEx		$O(\sqrt{r})$	rill 6.2	-03 0945	OKI	GIMA	100	WAS		-		NOT	ES:			_	Y	r N		mp	3.	'c
		<i>7</i> 7.	}		REW	RITT	EN			<u> </u>		79	U5.8	3463 3	32(

FH-Central Plateau Pr	oject	CI	IAIN OF CUST	ODY/S	AMPLE	ANAL	YSIS	REQUEST	F0:	3-006-62	Page 1	of 1
Collector Johansen/Pope/Pfister		Compa	ny Contact Huistrom	Telephor 373-39	ne No.			Project Coordinator TRENT, SJ	Price Code	8N	-	rnaround
Project Designation 200-PW-2/200-PW-4 OU - Borehold	Soil Sampling		ing Location A-37 (C4106); (12.5'-15	3)				SAF No. F03-006	Air Quality		45]	Days
Ice Chest No. ERC 96			ogbook No. 7-N-3361		COA 117504ES	10		Method of Shipment Federal Express	· •			
Shipped To EDERLINE SERVICES (Formerly)	RECRA MA) AGR 41	22/03 Offsite	Property No. A	30	22	0	·	Bill of Lading/Air E	ill No. S EE	OSPO		
POSSIBLE SAMPLE HAZARDS/F			Preservation	Cool 4C	Cnoi 4C	Cool 4C	Nor	ne None				
Special Handling and/or Storag	e		Type of Container	aG	вG	aG	aC	; ag				
: 		,	No. of Container(s)	1 120mL	l 60mL	1 120mL	60m	1 /1 /60mi.		<u> </u>	ļ	
· · · · · · · · · · · · · · · · · · ·			Volume	Chromium	NO2/NO3 -	Oil & Grease -	See item				}	
s	SAMPLE ANALY	'SIS		Hex - 7196	353.2	413,1	Speci					
·			·				100	Men				
Sample No.	Matrix *	Sample Date	Sample Time			-3	:			,		
B16W79	SOIL	4/2.8/03	1358	1	+	1 X	<u> </u>				ļ	
										<u> </u>		
CHAIN OF POSSESSION		Sign/Print	Names		SPEC	LAL INSTR	L	ONS 184- 4/2	2/03	<u> </u>	<u>. </u>	Matrix *
	Date/Time /145	Received By/Stor	ed In Da	ite/Time 16 45		in laboratory is	to achie	we a detection limit of 50.0 sel range compounds from	pCi/g for Carbon-14.	** The laborat	ory is to	S=Soil
Greg Hurano Ingthon	7/28/03 Date/Time	REFIA 3		ite/Time				n-89.90 — Total Sr; Isotop	-	7771 · Cadena 1	4: Jodine.	SE=Sediment SO=Solid SI=Shadge
Relinquished By/Removed From REF LA 3728 5	103 1100	Received By/Stor		03 11		Nickel-63, Nep			 -			W = Water O=Oil
Rollinguished Qu/Personal Errors	Date/Time	Received By/Stor	edja: ^D a	nte/Time				l of	t · ·			A=Air DS=Drum Solids
	103 1100	-,	EX									DL=Drum Liquids
Yes Ex	Date/Time 2030545	Received By Stor	Man 5.	te/Time <u> </u>	94		٠, ،	la to				Wi≏Wipe L=Liquid V=Vegetation
Relinquished By/Removed From	Date/Time	Received By/Stop	ed In Da	te/Time	Pe	ersonnel not linguish san	avanau nples fr	om the 3728				X=Other
Relinquished By/Removed From	Date/Time	Received By/Stor	ed In Da	te/Time	R	ef#_ <i>11</i> 7_o	n _ <u>S</u> _]_ <u> _ U</u> _Z				
LABORATORY Received By SECTION				Tit	ile				 _	Ε	Pate/Time	
FINAL SAMPLE Disposal Method DISPOSITION						Dispo	sed By			I	Date/Time	

FH-Central P	lateau Project	CI	IAIN OF CUST	ODY/S	AMPLI	E ANAL!	YSIS	REQUEST		F03	-006-63	Page 1	of 1
Collector Johansen/Pope/Pfister			ny Contact Hulstrom	Telepho 373-3				Project Coordin TRENT, SJ	ator	Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 (OU - Borehole Soil Sampling		ing Location -A-37 (C4106); (17.5'-20)')				SAF No. F03-006		Air Quality		45]	Days
Ice Chest No.			ogbook No. F-N-3361		COA 117504ES	S10		Method of Ships Federal Expres					
Shipped To EBERLINE SERVICE	RECKA S (Formerly TMA) Agr 4	122/03 Offsite	Property No.	403	02	20		Bill of Lading//	Air Bill l	No. 50E	0370	-	
	HAZARDS/REMARKS												
			Preservation	Cool 4C	Cool 4C	Cool 4C	Nor						
Special Handling and	d/or Storage		Type of Container	aG	aG	aG	aG		<u>.</u>			<u>.</u>	
			No. of Container(s)	1	1	1	1						
			Volume	120mL	60mL	120mL	60u	L /60mL					
	SAMPLE ANALY	'SIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instruct	à (
				and the second second			_^/	All	e recijie			grander of the state of the	Francis Compa
Sample No.	Matrix *	Sample Date	Sample Time				7		: :: <u>::-</u>			E a co	
B16W80	SOIL	4/28/03	1560	<u> </u>	X	X	/ —						
		·•			<u> </u>	 							
			- 	 		† -	 						
} 				<u> </u>			<u> </u>						
CHAIN OF POSS	ESSION	Sign/Print	Names	·		CIAL INSTR			18				Matrix *
Relinquished By/Removed Fr	Dre Chumb 4/296	REF IA	3728 42803	ite/Time 1645 ite/Time	геро	rt both kerosene	and dies	ve a detection limit of sel range compounds i n-89.90 — Total Sr. I	from WTT	H-D analysis.			S=Soil SE=Sodiment SO=Solid
Relinquished By/Removed Fr		Received By/Stor	шш, ,			Nickel-63: Nep				1/22/03	.527, Caroon-1	4, roduje-	Si=Sindge W = Water O=Oti
Relinquished By/Removed Fr		Received By/Stor	ed in Da	ate/Time				74		, , ,			A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed B	om Date/Time 5-2-03 0945	Received By/Stor	200 m	ate/Time -ひろ <u>〇</u> '	7 45								T=Tissue Wl=Wipe L=Liquid V=Vegetation
Relinquished By/Removed Fr						Personnel no relinquish sa	mples_f	rom the 3728					X=Other
Relinquished By/Removed Fr	rom Date/Time	Received By/Stor	ed in Da	nte/Time		Ver 4 117 (лі <u> </u>	11102					
LABORATORY Reco	cived By	<u></u>		T	itle						D	ate/Time	
FINAL SAMPLE DisposiTION	posal Method					Dispo	sed By				Ε	Date/Time	

FH-Centra	l Plateau Project	ODY/S	AMPLE	ANAL	YSIS	REQ	UEST		F0.	3-006-64	Page 1	ot <u>1</u>		
Collector Johansen/Pope/Pfi:		Compa	ny Contact Iulstrom	Telephon 373-39	e No.				t Coordina	ator P	rice Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW	/-4 OU - Borehole Soil Sampling		ng Location A-37 (C4106); (27.5'-30	<u>n</u>				SAF N F03-00		Ai	ir Quality		45 1	Days
Ice Chest No. ER	c 96 056		ogbook No. -N-3361		COA 117504ES			Fed	d of Shipu eral Expres	s		· .		
Shipped To EBERLING SERV	RECRA MGES (Formerly TMA) AGA i	Offsite	Property No.	030	22	2	<u>.</u>	Billo	f Lading/A	ir Bili No.	SOE	037	<u></u> _	
POSSIBLE SAMP	LE HAZARDS/REMAŔKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	ne	None					
Special Handling	and/or Storage		Type of Container	aG	aG	aG	aC	3	3/6					
Special	, and/or blorage		No. of Container(s)	1 120mL	l 60mL	l i20mL	1 60π	/	l 60mL		-			
			Volume	Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Spec		ritium - H3		 	-		
	SAMPLE ANALY	/SIS					instruc		,			Tierra		
Sample No	D. Matrix *	Sample Date	Sample Time	The state of the state of								licto	Same of the second	
B16W81	SOIL	4/20/03	0.745	K	+	٨	V			and a second sec		Blyw	17/u	SUF)
							-				 	-		
CHAIN OF P	OSSESSION	Sign/Prin			SPEC	IAL INSTI	RUCTI	ONS	180	1/24	13	44.75		Matrix *
Relinquished By/Renley	100 <u>- 100 </u>	RECOL	R. F. hibem 4	29/03/	160) repor	t both kerosene	e and die	sel range	compounds f	rom WTPH-	D analysis.	** The laborat	,	S=Soil SE=Soilment SO=Solid
	f. 1160 4 CAB3	1B	3728 4.26	ate/Time / 4		echnetium 99, Mickel-63: Ne			- Total Sr; is 1 SVL			Z3Z } , Carbon -	4; lodine-	SI-Sludge W = Water O-Oil A-Air
Relinquished By/Remov	red From Pate/Time 1100	Received By/Stor	with the	5103	1106									DS+Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Remov	de 3 1 03 1100	Received By/Stor	<u>ex</u>	ate/Time										WI=Wipe L=Liquid V=Vegetation
Refinquished By/Remov	5.203 0945	Received By/Stor	much 52	ate/Time - 03 6 27 Pate/Time	/: re	ersonnel not linquish san ef# <i>LB</i> or	nnles fr	om the	3728					X=Other
Relinquished By/Remov		Received By/Sysi							 _				Oate/Time	
SECTION	Received By		<u></u>	Ti			and Di						Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method					Disp	osed By					1	Date/Time	

FH-Central	Plateau Project	CI	IAIN OF CUST	ODY/S	AMPL	E ANAL	YSIS	REQU	EST	F	03-006-65	Page 1	of <u>1</u>
Collector Johansen/Pope/Pfiste		Сопра	ny Contact Iulstrom	Telephor 373-39	ne No.				oordinator	Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-	4 OU - Borehole Soil Sampling		ing Location -A-37 (C4106); (37.5'-40	')				SAF No. F03-006		Air Qualit	ty 🗆	45 1	Days
Ice Chest No. ER C	- 96 055		Logbook No. F-N-3361		COA 117504E	S10		Federal	Shipment Express			·	· .
Shipped To	RECRA 18	Offsite	Property No.	030	22	0	·	Bill of La	ding/Air Bi	11 No. 5252	POSPC	, 	·····
	E HAZARDS/REMARKS	7			1				Λ				
			Preservation	Cool 4C	Cool 4C	Cool 4C	No	oe N	one /				
C 1111 Alian	M Cha		Type of Container	аG	aG	аG	aC	3 a	9				
Special Handling a	and/or Storage		No. of Container(s)	l	1	i	1		1				
			Volume	120mL	60mL	120mL	60n	nL 60	mi				1
			<u> </u>	Chromium Hex - 7196	NO2/NO3 353.2	- Oil & Grease - 413.1	See item Spec	`''	m - H3				
 	SAMPLE ANALY	YSIS				1	Instruc	aiode.	-	Ì			
							Ŋ				Tam.		
ļ				5 to 1	3-1-1-1	AND STATE OF THE S	<u> </u>		3/41 1/2 1		Tilto:		1
Sample No.	Matrix *	Sample Date	Sample Time		-4		7				21.4.3	10 (10)	S/E)
B16W82	SOIL	4/29/0	3 0900	1-7	1	 	/ —		 		DIGM	18 (W	perj.
<u> </u>			 	 			 -					 	
				<u> </u>			1—					 	
				 	-		┨──					 	
CHAIN OF PO	CCECCION	Sign/Prio	t Names	<u> </u>		ECIAL INSTI	RUCTI	ONS	282	4/22/03		<u> </u>	Matrix *
Reliaguighed By/Removed			red in Eec p	ate/Time		The laboratory i	s to achie	eve a detectio	O.OC TO MINITE	p Ci/g for Carbon l VTPH-D analysis.	4+ ** The labora	tory is to	S=Soil SE=Sediment SO=Solid
Relinquished By/Removed		Received By/Sto	red In D	ate/Time	, — ; ;	9: Nickel 63: Ne	, Strontium-	im-89,90 10	ital Sr, Isotopic	Thorium (Thorium)	nr-232); Carbon	14; Iodine	SI=Sludge W = Water
	2 f. hlb 4-290;	Received By/Sto		t. 29.	<u>می</u> "	, , , , , , , , , , , , , , , , , , ,		- 7	W.	1112/05			N=Nir
Relinquished By Removed	5 103 //00	SJEAU	JHL 51	_	100								DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed	From Date/Time			ate/Time	EX	Domestia.							WI=Wipe L=Liquid
S_16ALE MOd Relinquished By/Removed		Received By Sto	zed in D	ate/Time		Personnel no relinquish sa	mples f	from the 37	28				V=Vegetation X=Other
Med C>	<u> </u>	15 DV	Music 5.	ate/Time	0945	Ref #	on <u>5</u>	_//	<u> </u>				
Relinquished By/Removed	d From Date/Time	Received By/Su	red In	ale i inie									<u> </u>
Laborerion	Received By			T	itle						1	Date/Time	
	Disposal Method					Disp	osed By	<u> </u>				Date/Time	
DISPOSITION													

FH-Central Plate	au Project	C	HAIN OF CUS	TODY/S	AMPLE	E ANAL	YSIS	REQUEST	I I	03-006-66	Page 1	of 1
Collector Johansen/Pope/Pfister			any Contact Hulstrom	Telepho 373-3				Project Coordinat TRENT, SJ	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU -	Borehole Soil Sampling		ling Location -A-37 (C4106); (47.5'-5	(0)	,·-			SAF No. F03-006	Air Qual	ity 🗌	45]	Days
Ice Chest No. ERC	96 056	HIN	Logbook No. F-N-3361		COA 117504ES	310		Method of Shipme Federal Express				
Shipped To EBERLINE SERVICES (FO POSSIBLE SAMPLE HAZ	CERA OTHERY THAN	Offsit	e Property No.	930	ZZO			Bill of Lading/Air	r Bill No. SE	E 050		
POSSIBLE SAMPLE HAZ	ARDS/REMARKS	11.12			1							(
'			Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	/			<u> </u>	<u> </u>
Special Handling and/or	Storage		Type of Container	aG	aG	aG	aG	/			<u> </u>	
			No. of Container(s)	1	1	1	1				ļ	
			Volume	120mL	60mL	120mL	60m	L 60mL				
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Spec	ii /				
	SAMPLE ANAI	LYSIS					, N	100 VO				
}							10	11/1	Tiet	ð:		
Sample No.	Matrix *	Sample Date	Sample Time			Her Driver						
B16W83	SOIL	4/24/03	1020	1	X	+	V_{-}		B164	X9 CW	5(F)	
	<u> </u>	ļ		 	 	 	 			- 	 	
		<u> </u>				 	 				 	
		 		 -	-{	 	├-	- 			 	 -
CHAIN OF POSSESSI	ION	Sign/Prin	nt Names		SPE	CIAL INST	RUCTION	ONS 18/	v 4/11/03			Matrix *
Relinquished By/Remdynd From		Received By/Sto	red in (= e = 1	15/1/3		he laboratory i	s to achie	ve a detection limit of 5 sel range compounds fro	O'S ACAR STATE OF STA	14. ** The labora	itory is to	S=Soit SE=Sediment
Relinguished By/Removed From	DECOVER 1 3C	INECEIVED DAVOID	red In	Date/Time		Feelmenum-99 Nickel-63: Ne	Strontius	n-89,90 Total Sr; Iso	topic Thorium (Thori	im-232); Carbon-	14; Iodine-	SO=Solid SI=Sludge W = Water
R.FOOR REFER	16 4.290			. 4.9	<u> </u>	TATE KEI-03, TAE	Diminion-1	94	a 4/ml	<i>(</i>)		O=Oil A=Air
Relinquished By/Removed From	·	Received By/Sto	·шш, , / ·		100							DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From	Date/Time 5 1 0 3 1/0	Received By/Sto	red in	Date/Time		D.						W!=Wipe L=Liquid
Relinquished By/Removed From	Date/Time	Received By/Sto	ored lay	Date/Time		rel	rsonnel Iinquish	not available to	2720			V=Vegetation X=Other
Relinquished By/Removed From	5.2-03 0945 Date/Time	Received By/Sto		Date/Time	37	Ke	r# <u>L</u> C	samples from the 3	0.3]
LABORATORY Received	Ву			Т	itle			·			Date/Time	.L
SECTION FINAL SAMPLE Disposal	Method					Disp	osed By				Date/Time	
DISPOSITION												

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FH-Centra	ıl Plateaı	ı Project	CI	HAIN OF CUST	ODY/S	AMPLE	ANAL	YSIS	REQ	UEST		F03	3-006-73	Page 1	of]
Collector Johansen/Pope/Pfi	ster			iny Contact Hulstrom	Telepho 373-3				Project TRENT	Coordina , SJ	tor	rice Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW		rehole Soil Sampling		ing Location -A-37 (C4106); (17.5'-20	ກ	·- <u>-</u>	·		SAF No F03-00		A	ir Quality		45]	Days
Ice Chest No. ER	C 91	6 056	HN	Logbook No. F-N-3361		COA 117504ES	10		Fede	of Shipmeral Express					
Shipped To	RECIVICES (Port	2A 48/2 nerty TMA) 4/22	Offsite	Property No. A	330	220	· ·		Bill of	Lading/Ai	r Bill No	3E 0	ے م د		
POSSIBLE SAMP	LE HAZAF	DS/REMARKS	,	·	T					X					
				Preservation	Cool 4C	Cool 4C	Cool 4C	Nor		None	<u></u>				
Special Handling	g and/or St	orage		Type of Container	aG 1	∎G I	aG·	aG 1		29/		<u> </u>			
				No. of Container(s)	_ '	<u> </u>		<u> </u>		/ 1		<u> </u>		<u> </u>	
				Volume	120mL	60mL	120mL	60m	ı //	60mL					
					Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413 i	See item Speci	.]/ آلفا	tium - H3					
i		SAMPLE ANAL	YSIS				•	instruct	iony (7]			
							[ASY							
Sample No	0.	Matrix *	Sample Date	Sample Time	Section and a			n Á						groganis ir and and	
B16W90		SOIL	4/28/03	1510	X	X	X	V							
							1			T					
														-	
												<u> </u>	<u> </u>		
:															
CHAIN OF PO			Sign/Prin				IAL INSTI			93		1/22/03			Matrix *
Relinquished Dy/Remov			Received By/Stor		ate/Time 64.		ie laboratory is i both kerosene						** The laborate	ory is to	S=Soil SE=Sediment
Relinquished By/Remove	g / Program	Date/Time	Received By/Stor	3728 42803	ate/Time		echnetium 99	Summa	,, 89.90 —	Total Sr: Iso	ooic Thor	un () horsum	232); Carbon-L	1: Iodino-	SO=Solid SI=Sludge
REF IA	3728 2		1	SINCL 51	03 11	00 129;	Nickel-63; Ner	dunium-2	37	182	4/22/	43	,.		W = Water O=Oil
Relinquished By/Remoy		Date/Time 5 / 0 3 110	Received By/Stor	red_Man Da	ate/Time				'	•			•		A=Air DS=Drum Solids
Relinquished By/Remov	ved From	Date/Time	Received By/S/or	od in Da	ate/Time										DL=Drawn Liquids T=Tissue WI=Wipe
Gled En		5.2.03 0945	- 1 - 12 /2	min 52	43 09	41									L=Liquid V=Vegetation
Relinquished By/Remove	ed From	Date/Time	Received By/Stor	ed In Da	ate/Time		Personnel relinquish	not avai sample:	lable to s from th	e 3728					X=Other
Relinquished By/Remov	ed From	Date/Time	Received By/Sto	red In Di	ate/Time		relinquish Ref # 1	on <u>c</u>	511	102					
LABORATORY SECTION	Received By	<u> </u>			Ti	tle					_		D	ate/Time	
FINAL SAMPLE DISPOSITION	Disposal Me	thod					Dispo	sed By					Đ	ate/Time	

FH-Central Plate	au Project	CI	IAIN OF CUST	CODY/S	AMPLI	E ANAL'	YSIS	REQUI	EST	FO	13-006-74	Page 1	OI T
Collector Johansen/Pope/Pfister		Compa	ny Contact Iulstrom	Telepho 373-3	ne No.			Project Co TRENT, SI	ordin a tor	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - E	Borehole Soil Sampling		ng Location A-37 (C4106); (0.5')					SAF No. F03-006		Air Qualit	y 🗆	45.	Days
Ice Chest No. ERC 9	6 056		ogbook No. -N-3361		COA 117504ES	310		Method of Federal I	xpress				
Shipped To EBERLING SERVICES (Fo	STOS PRECRA	Offsite	Property No. Ao	30 Z	20			Bill of Lac	ling/Air Bi	1 No. SEE	05/20		
POSSIBLE SAMPLE HAZA	ARDS/REMARKS			ł	}	1			}	}	}		1
·			Preservation	Cool 4C	Cool 4C	į		İ	İ			1	
 Special Handling and/or :	Storage		Type of Container	aG	aG							-	
Special Managing and/or			No. of Container(s)	1	1								
			Volume	60mL	250mL								
	SAMPLE ANALY	SIS		Pesticides - 8081	Chioro- Herbicides - EPA8151								
Sample No.	Matrix *	Sample Date	Sample Time				-						
B16W91	SOIL	4/24/03	130		<u> </u>	<u> </u>	 					<u> </u>	<u> </u>
				ļ	 	 	↓_ _					<u> </u>	
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<u> </u>	<u> </u>			<u> L</u>		<u> </u>	<u> </u>			l		┸——	
CHAIN OF POSSESSIO		Sign/Print Received By/Stor		ate/Time	SPE	CIAL INSTE	RUCTIO	ONS	_				Matrix *
Relinquished By/Removed From		1 ~ ~ ^ ^	3728 4250	3 164	5								S=Soil SE=Sediment SO=Solid
Relinquished By/Removed From	Date/Time	Received By/Stor	er in	ate/Time	00								Si=Sindge W = Water
Relinquished By/Removed from	5103 1100 Date/Time	SAGALET Received By/Stoff	/ 2/	ate/Time									O=Oii A=Air
	5103 1100		<i>5</i> X										DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From	Date/Time	Received By/Stor	W /	ate/Time	سلسن		انم	able to 27	28				T=Tissue W1=Wipe L=Liquid
Relinquished By/Removed From	5.2.03 0j45 Date/Time	Received By/Stor	hin Di	ate/Time	1775	Personnel n	esuibles	from the 3	03				V=Vegetation X=Other
recuiring partition to the train				(T'-		Personnel n relinquish Ref# LA	on E	مستنسا لسسي					
Relinquished By/Removed From	Date/Time	Received By/Stor	ea in Di	ate/Time	}	Kei							
LABORATORY Received E SECTION	Зу			Ti	itle							Date/Time	
FINAL SAMPLE Disposal N DISPOSITION	Aethod					Dispo	osed By					Date/Time	

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

LIENT: TNU Hamford

urchase Order/Project:

DATE: 5.2.03

AF#Y SOW# / Release #: FO3-006

aboratory SDG #:

0305L329

OTE:	ALL ENTRIES MARKED "NO" MUST BE I	EXPLAINED IN	THE COMM	ENT SECTION	!
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	□ No	□ N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes	□ No	□ N/A	☐ see Comment #
3.	Airbill # recorded?	Yes	□ No	□ N/A	□ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	DXYes	□ N ₀	DNIA	□ see Comment #
5.	Sample containers are intact?	~Q/Yes	□ No	□ N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	Yes	□ No.	□ N/A	☐ see Comment #
7.	All samples on coc received?	Yes	□ No	□ N/A	· D see Comment #
8.	All sample label information matches coc?	DVY es	□ No	DN/A	see Comment#
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□Yes	□ No	DINA	☐ see Comment #
10	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	by Yes	D No	□ N/A	□ see Comment #
11.	Where applicable, bar code labels are affixed to coc?	□ Yes	□ No	DONIA	🗆 see Comment i
12	coc signed and dated?	Dyes	D No	DNA	D see Comment (
13	. coc will be faxed or emailed to client?	U Yes	□ No	□ N/A	☐ see Comment t
14	. Project Manager/Client contacted concerning discrepancies? (name/date)	☐ Yes	, D No	E N/A	☐ see Comment

Cooler # / temp (°C) and Comments:

Elc 96 056 / 13"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dignuen

Lionville Laboratory, Inc. PEST/PCB ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
		- —			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
B16W91	007	S	03LX0536	04/28/03	05/05/03	05/23/03
B16W91	007 MS	S	03LX0536	04/28/03	05/05/03	05/23/03
B16W91	007 MSD	S	03LX0536	04/28/03	05/05/03	05/23/03
LAB QC:						
<u> </u>						
PBLKUG	MB1	S	03LX0536	N/A	05/05/03	05/23/03
PBLKUG	MB1 BS	S	03LX0536	N/A	05/05/03	05/23/03

Agres/17/3





Analytical Report

Client: TNU-HANFORD F03-006

LVL#: 0305L329

SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00 **Date Received:** 05-02-2003

PESTICIDE

One (1) soil sample was collected on 04-28-2003.

The sample and its associated QC samples were extracted on 05-05-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-23-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from a sample that met LvLI's sample acceptance policy.
- 2. The required holding time for extraction and analysis has been met.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. Two (2) of ten (10) surrogate recoveries were outside acceptance criteria. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per sample).
- 5. All blank spike recoveries were within acceptance criteria.
- 6. One (1) of twelve (12) matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\pest\tnu hanford\0305-329.pes

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 8 pages.

02

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 0366205 0305L329 Parameter: 0608 HV Initiator: D. Walker Batch: 007 T Samples: Matrix: 6/17/0 Date: Method: SW846MCAWWICLPI Prep Batch: 0314057 6 TNU Client: 1. Reason for SDR _ Sampler Error on C-O-C a. COC Discrepancy Tech Profile Error Client Request Transcription Error Wrong Test Code __ Other ___ b. General Discrepancy __ Missing Sample/Extract __ Container Broken __ Insufficient Sample __ Wrong Sample Pulled __ Label ID's Illegible __ Hold Time Exceeded __ Received Past Hold Preservation Wrong Improper Bottle Type Not Amenable to Analysis Note*: Verified by [Log-In] or [Prep Group] (circle)...signature/date: _ c. Problem (Include all relevant specific results; attach data if necessary) Matrix spike duplicate was high for 4, 4-DDT. The matrix spike recoveries were within control limits. There were notits above reporting limits for 4, 4'-DDT. See attached sheet) 2. Known or Probable Causes(s) 3. Discussion and Proposed Action Other Description: Navale - 10/3 Re-log _ Entire Batch Following Samples: Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle) 4. Project Manager Instructions...signature/date: Disagree with Proposed Action: See Instruction Include in Case Narrative Client Contacted: Date/Person Add Cancel Other Explanation: 5. Final Action ... signature/date: _ Verified re-[log][leach][extract][digest][analysis] (circle) Included in Case Narrative Hard Copy COC Revised **Electronic COC Revised** EDD Corrections Completed When Final Action has been recorded, forward original to QA Specialist for distribution and filing. Route Distribution of Completed SDR Route Distribution of Completed SDR __ Metals: Beegle X Initiator __ Inorganic: Perrone X Lab General Manager: M. Taylor __ GC/LC: Kiger X Project Mgr: Stone/Johnson/Haslett __ MS: Rychlak/Layman X Technical Mgr: Wesson/Daniels __ Log-in: Melnic X QA (file) __ Admin: Soos __ Data Management: Feldman Other: Sample Prep: Beegle/Kiger



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 05/28/03 17:55 Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1 RFW Batch Number: 0305L329

	Cust ID:	B16W91		B16W91		B16W91		PBLKUG		PBLKUG BS		
Sample	RFW#:	007		007 MS	;	007 MSD		03LX0536-M	B1	03LX0536-M	в1	
Information	Matrix:	SOIL		SOIL	SOIL			SOIL		SOIL		
	D.F.:	1.0	0	1.0	0	1.0	0	1.0	0	1.0	0	
	Units:	UG/K	Œ	UG/F	(G	UG/K	G	UG/K	G	UG/K	:G	
Surrogate:	Tetrachloro-m-xylene	100	*	95	8	105	ક	100	ૠ	95	8	
	Decachlorobiphenyl	125 *	*	120	*	125 *	ક	120	*	115	8	
			=fl==		=fl=		=f1	=======================================	= f l	=========	=fl	=======fl
Alpha-BHC		1.8	U	1.8	U	1.8	U	1.7	U	1.7	U	
Beta-BHC		1.8	U	1.8	U	1.8	U	1.7	U			
Delta-BHC		1.8	U	1.8	U	1.8	U	1.7	U	1.7	υ	
gamma-BHC ((Lindane)	1.8	U	104	*	114	*	1.7		104	ક	
Heptachlor_		1.8	U	98	*	106	웋	1.7	U	102	윻	
Aldrin _		1.8	U	94	8	104	¥	1.7	Ū	96	ક્ષ	
Heptachlor	epoxide	1.8	U	1.8	U	1.8	U	1.7	U	1.7	U	
Endosulfan	I	1.8	U	1.8	U	1.8	U	1.7	ប	1.7	υ	
			Ū.	112	*	121	ક્ષ	3.3	U	112	ક	
4,4'-DDE		3.6	υ	3.6	U	3.6	U	3.3	U	3.3	U	
Endrin		3.6	U	118	૪	128	ક	3.3	U	115	૪	
Endosulfan	II	3.6	U	3.6	U	3.6	Ū	3.3	ប	3.3	U	
4,4'-DDD		3.6	υ	3.6	Ū	3.6	U	3.3	U	3.3	U	
Endosulfan	sulfate	3.6	U	3.6	U	3.6	U	3.3	U	3.3	U	
4,4'-DDT		3.6	U	114	8	124 *	8	3.3	Ū	107	४	
Methoxychlo	or	18	υ	18	Ū	18	U	17	U	17	U	
Endrin keto	one	3.6	U	3.6	U	3.6	U	3.3	U	3.3	U	
Endrin alde	ehyde	3.6	U	3.6	U	3.6	บ	3.3	U	3.3	U	
alpha-Chioi	dane	1.8	Ü	1.8	U	1.8	Ū	1.7	U	1.7	U	
gamma-Chlor	rdane	1.8	U	1.8	U	1.8	U	1.7	. n	1.7	U	
Toxaphene		180	U	180	U	180	U	170	U	170	Ū	

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Aug olos

Lionville Labor	ratory	Use Only	Custo	ody Tra	ansfe	er F	Rec	ord/L	ad v	VV C	ľK	NE	qu	てつに	raye_	<u></u>	·	<u>-</u>		4 2	VI	. 1
0305	<u>5L3</u>	29		FIELD PE	RSONNE	EL: C	OMPLI	ETE ONL	Y SHAD	ED A	REAS		B					\sim		٠,	ONVILLE LABOR	SATORY INC.
Client	701-	Hanford	Foa	-CYY 0			Refrige	erator #				2	ā					a	3	2		
ł	_	pling Date	=				#/Type Container		Liquid													
•)-Coch-0		900			<i>ж</i> тура	Container	Solid			1PG	186					IAG	186	IAG		
1		ne #					Volum	oluma .		<u> </u>		_							<u> </u>		1	
Lionville Lab	oratory	Project Manag	jer <u>0</u> 5				V 3		Solid			(40	250			<u> </u>		180	cas	190		
		Del Std					Preservatives				ORG	-	-			1-00	ORG		ļ <i>-</i> -	_		
]		3-03		`	J		ANAL' REQU	YSES ESTED	-	δ V		Pest/	Ferb			Metal	Z O					
MATRIX	 	T		 -		ıtrix	 	T	Γ	-	<u> </u>			Lik	onville La		ory Us	e Onl	<u>'</u> у	1	<u> </u>	
S- Soil SE-Sediment	Lab ID	c	lient ID/Desc	ription	Che	DC osen ⊮)	Matrix	Date Collected	Time Collected			H807	X BOHC					ICRO	INSUE	TOGGR		
SO - Solid SL - Sludge					MS	MSD	 -	 	 -		╂╼╼┥	<u> </u>	ā			├ ─	├		1	P		 -
W - Water O - Oil	cor	Brown	= ,			 	<u>s</u>	45803	13540	 -						├	├	~	<u> </u>	~	├─-┼-	
A - Air DS - Drum	500	1 1	<i>yo</i>					1 1	1210						 -	 	 -	-	 -	1	├}-	
Solids DL - Drum	202		<u> </u>		-+-		├ ┼╌	4 510 3	0745							├	├	-	 			
Liquids L - EP/TCLP	ळ्य	٤ع	<u> </u>			ļ		 	0300	 					 -	├	├	-	 -	-	\vdash	
Leachate WI - Wipe	8	1	33			 		 	1090	 -	} 		 - 		 -	 	┼	-	 	~	+-+	
X - Other F - Fish	box	,	OF			 	├-	45803	1200		}					 -	-		<u> </u>		 	
1	<u>007</u>	<u> </u>	91			 	1-	1-	1130	 	 		~				├	├	├		╁╼╌┼╾	
	<u> </u>	<u> </u>				<u> </u>	<u> </u>	.	 		├					 	 		 		┼─┼	
		<u> </u>	<u>-</u>			 	<u> </u>			 	}					 	├		 	 		
	<u> </u>	<u> </u>					REVISIO	No.	<u> </u>		1		<u> </u>			┸╤	<u> </u>	<u> </u>	<u> </u>	<u> </u>		
Special Instruc		Pun Mo 5004	dnix C	≱C				1 2 3 4								1) Ha Ai — (2)	amples Shippe and Del irbili # _ Ambies Receiv	were:/ ed livered bell nt ore	or or	Ta 1) Pa 2) Pa	r Use Only mper Resistar Present or ackage (Y) Unbroken ackage (Y) Present or	nt Seal was: n Outer) or N on Outer) or N
Relinquished	a {	Received	Date	Time	Relinqui	shed		5 6 Received		ate	Tim	•		epancies		~ Co	ondition Sample roperly	i (Y)o es	r N ved	4) Sa C(Unbroken ample (Y) OC Record on Sample	on or N Present e Rec't
FedEx DODA 10 53 0945 OR							GNAL COCIFE COC Record? Y or N NOTES:					5) Received Within (**) or N Holding Times Cooler (**) or N Temp. 1:3_°C										
		<i>//</i> ·			<u>K</u>	F.M	4111	CN			<u> </u>		79	128	<u> ४७३ ३</u>	321	<u> </u>					

FH-Central Plateau Project			CI	IAIN OF CUST	ODY/S	AMPLI	E ANAL	YSIS	REQ	UEST		F	03-006-62	Page 1	of 1
Collector Johansen/Pope/Pfi:	ster	··· _ ··		ny Contact Hulstrom	Telepho 373-3				Project TREN	t Coordin T, SJ	ator	Price Code	8N	Data Tu	rnaround
Project Designation 200-PW-2/200-PW	V-4 OU - B	orehole Soil Sampling	Sampl 216	ing Location -A-37 (C4106); (12.5'-15	. 57)				SAF N F03-00			Air Quali	t y 🗆	45	Days _
Ice Chest No. EX	ور ع		HN	Logbook No. F-N-3361		COA 117504E	COA 17504ES10			d of Ships eral Expres		•			
Shipped To EBERLINE SERV	VICES (For	RETRA merly TMA) AGR		Property No. A	22	220			Bill of Lading/Air Bill No. SEE OSPC						
POSSIBLE SAMP			71 - 7 - 2]] "			1	^]
				Preservation	Cool 4C aG	Cool 4C	Cool 4C	Nor		None					
Special Handling	g and/or S	torage		Type of Container		a-G	aG	8 C		3 9					
		-		No. of Container(s)	1	1	1	1		<u>/</u> 1					
				Volume	120mL	60mL	120mL	60m	դ /	60mL					
		GARGE FANIA		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instruct	iài /	ritium - H3						
		SAMPLE ANA	LYSIS		:			Neg Y	1121						
Sample No	o. [Matrix *	Sample Date	Sample Time									4 to 1 to 1 to 1 to 1 to 1 to 1 to 1 to		
B16W79		SOIL	4/7.8/03	1358	7	+	X	7							
						<u> </u>	<u> </u>								
							<u> </u>								
							ļ <u>.</u>	-	_						
CHAIN OF PO	0665610	N	Sign/Print	Names	<u> </u>	SPE	CIAL INSTI	HCTIC	ONS A	Ser 9	122/	• 3		<u> </u>	Matrix *
Relinquished By/Remove Relinquished By/Remove	ed From 3 7 2 8 ed From A D D ed From ed From	Date/Time Date/Time Date/Time Date/Time	ed in Da Da Da Da Da Da Da Da Da Da Da Da Da	ate/Time 16 4 5 ate/Time 03 // ate/Time ate/Time 3 03 C ate/Time ate/Time	repo (1) (1) (129;	The laboratory is rt both kerosens	s to achie and dies Strontium-2	nee a defensel range of me 89.90 – 297	often limit of compounds (Total Sr. 1s	rom WTI	PH-D analysis.	+- ** The laborat 232}; Carbon - I		S=Soil SE=Sediment SO=Solid SI=Studge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue W1=Wipe L=Liquid V=Vegetation X=Other	
LABORATORY Received By					Ti	tle							D	ate/Time	<u> </u>
SECTION FINAL SAMPLE Disposal Method DISPOSITION							Dispo	sed By			-		1	Date/Time	

															7	 _	
FH-Central Plateau Project				CH	IAIN OF CUST	ODY/S	AMP	LE.	ANALY	YSIS :	REQUEST	'	F03	3-006-63	Page 1	of]	
Collector Johansen/Pope/Pfi	ster				ny Contact Iulstrom	Telepho 373-3					Project Coordi TRENT, SJ	ator	Price Code	8N		rnaround	
Project Designation 200-PW-2/200-PW	V-4 OU - B	orehole Soil Sampling			ing Location A-37 (C4106); (17.5'-20	')					SAF No. F03-006		Air Quality		45]	Days	
Ice Chest No.	. c 9	6 056			ogbook No. 2-N-3361		COA 117504	4ES10	0		Method of Shipment Federal Express						
Shipped To		RELEA merty TMA) - ASP	1/22/02	Offsite Property No. A030220					Bill of Lading/Air Bill No. SEE OSP C								
POSSIBLE SAMP			7/2-7-3 1			<u> </u>	Υ	\Box			7		T	T		I	
1 OSSIBLE SAMI	LEMEA	RISKENIARS			Preservation	Cool 4C	Cool 4	ю	Cool 4C	None	None			<u> </u>			
Special Handling	g and/or S	torage		Type of Container		aG	aG		aG	aG	ad						
	•	J			No. of Container(s)	1	'	J	1	1	/¹	ļ]			
					Volume	120mL	60mL	L	120mL	60mI	60mL	-					
SAMPLE ANALYSIS						Chromium Hex - 7196	NO2/NO 353.2		Oil & Grease - 413.1	Sec item (Specia Instruction	i /						
										A)	althor	_					
Sample No	0.	Matrix *	Samp	le Date	Sample Time		; ; ; ; <u></u> .			<u> </u>			i de la compansión de l		il Hariametria	<u></u>	
B16W80		SOIL	4/2	8/03	1560	メ	X		X	<u> </u>		,				 	
												<u> </u>	<u> </u>				
			<u> </u>				↓	_									
		_,	<u> </u>			 	 										
			<u> </u>	7D : 4	Name and the same		1					181	- 4/21/c			Matrix *	
CHAIN OF PO		N Date/Time /64	Sig	gn/Print	Names	te/Time		* The	AL INSTR	to achiev	e a detection limit o	f 50.0 pCi	g for Carbon-14.	** The laboral	tory is to	1	
Relinquished By/Remove	ed From	Anno 4/2	REF	IA	3728 42803	1645	re	eport b	ooth kerosene	and diese	l range compounds	from WTP	H-D analysis.			S=Soil SE=Sediment SO=Solid	
Relinquished By/Remove	ed From	Date/Time	Receive	d By/Ston	ed In Da	te/Time 23 //	• •	1) Tec 29: Ni	shnetium 90; ickel-63; Nep	Strontium tunium-23	-89.90 - Total Sr,		orium (Thorium-1 //22/03	232); Carbon-	4; lodine-	SI=Studge W = Water O=Oil	
Relinquished By/Remow			OO Receive		ed In Da	te/Time					- 4a.	71	,,,,			A=Air DS=Drum Solids DL=Drum Liquids	
Relinquished By/Remov		Date/Time			ed In Da	te/Time		_	•							T=Tissue WI=Wipe L=Liquid	
1900 En		5203 099	15	Y-Y/	miss 5:2	d3 09	7.5	Pe	rsonnel not	availat	ole to					V=Vegetation	
Relinquished By/Remov	ed From	Date/Time	d By/Store	ed In Da	te/Time		rel Re	inquish sar	nples fr	om the 3728					X=Other		
Relinquished By/Removed From Date/Time Received By/Sto					ed In Da	te/Time					·						
LABORATORY Received By SECTION					Ti	tle							r	Date/Time			
FINAL SAMPLE Disposal Method DISPOSITION									Dispos	sed By				1	Date/Time		

FH-Central Plate	au Project	CI	IAIN OF CUST	ODY/S	AMPL	E ANAL	YSIS	REQUEST		F0	3-006-64	Page 1	of 1
Collector Johansen/Pope/Pfister			ny Contact Iulstrom	Telephor 373-39				Project Coordin TRENT, SJ	nator	Price Code	8N		naround
Project Designation 200-PW-2/200-PW-4 OU - I	Borehole Soil Sampling		ing Location A-37 (C4106); (27.5'-30)')				SAF No. F03-006		Air Quality	<i>'</i> 🗆	45 1	Days —
Ice Chest No. ER C	96 056		ogbook No. 7-N-3361		COA 1175041	ES10		Method of Ship Federal Expre	ss			- 	
Shipped To EBERLINE SERVICES (Fo	O in i DA	Offsite	Property No.	030	22	0		Bill of Lading/	Air Bill	No. 30E	037		
POSSIBLE SAMPLE HAZ		7			}			1	7				
			Preservation	Cool 4C	Cool 40	Cool 4C	Nos	ie None					
Special Handling and/or	Storage	,	Type of Container	aG	≱G	₽G	aG	196					
			No. of Container(s)	1	1	1	<u> </u>						
			Volume	120mL	60mL	120mL	60m	L 60ml					
			 	Chromium Hex - 7196	NO2/NO3 353.2	- Oil & Grease -	See item Speci						
	SAMPLE ANALY	SIS		}	} .		Instruct						1
							8/	lvi l			Tim		
C-make Nie	Matrix *	Sample Date	Sample Time				[.º/.				liuto:		
Sample No. B16W81	SOIL	4/29/03		X	+	K	17		· , · :		Bluw	7/1	S/E)
District	30/2	116.162	<u> </u>		 	 	 			-	0.000	- <u>' L.W.</u>	00.7
	 				 					- 			
						1							
CHAIN OF POSSESSI		Sign/Prin			SP	ECIAL INSTI	RUCTIO	ONS 182 ve a detection that o	4/2	2/03	** The laborate	nry is to	Matrix *
Redinquished By/Renleved From	6 4DAINS 14M	Received By/Stor		12416314				el range compounds			, The moone	., to	S=Soil SE=Sediment
Relinquished By/Removed From	Date/Time 400	Received By/Stor	ed In D	ate/Time	700 II	Technotium 99, 9: Nickel 63: Ner		n -89,90 – Total Sr; I			2327, Carbon 1	4; Iodine-	SO=Solid S≔Studge W = Water
Relinquished Byrkemoved From	16 cm 4 C1 53	Received By/Stor	3728 4.26	ate/Time			<u> </u>	18/	4/2	2/03			O=Oil A=Air
1B 3728 51	03 1/00 Date/Time	SJGA	work	5 103	1106								DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From SIGALS SINGLE 5	ed In / Di	ate/Time									W]=Wipc L=[.iquid		
Relinquished By/Removed From	ed in D	ate/Time		Personnel not	availab	le to					V=Vegetation X=Other		
Relinquished By/Removed From	· 03 0874 ate/Time	2.5	relinquish sam Ref#///B_on	iples fro	om the 3728 //0 .3					ł			
		<u> </u>		Tree.		. 						ate/Time	L
LABORATORY Received I SECTION	Ву			Ti	uc							ates I (III)	
FINAL SAMPLE Disposal N	Method	· · · · · ·				Dispo	sed By				E	ate/Time	

FH-Central	Plateau Project	CI	IAIN OF CUST	ODY/S	AMPLE	ANAL	YSIS	REQUEST		F03	-006-65	Page 1	of 1
Collector Johansen/Pope/Pfiste		Compa	iny Contact Hulstrom	Telephor 373-39	ne No.			Project Coordinat TRENT, SJ	or Pric	e Code	8N	Data Turnsround	
Project Designation	4 OU - Borehole Soil Sampling		ing Location -A-37 (C4106); (37.5'-40	")				SAF No. F03-006	Air	Air Quality 45			Days
Ice Chest No. ER C	9.6 055		Logbook No. F-N-3361		COA 117504ES	10		Method of Shipment Federal Express					
Shipped To EBERLINE SERVICE	RECRA 152 CES (Formerly TMA) 4/2	Offsite	Offsite Property No. A030 220					Bill of Lading/Air	OSPC				
	E HAZARDS/REMARKS	7.		[1	1		7				}	
			Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	ne None					
Special Handling a	and/or Storage		Type of Container	aG	aG	aG	aG	ac/					
Special Handling a	allwor ottorage		No. of Container(s)	1	1	i	1	/1					
			Volume	120mL	60mL	120mL	60π	ıL 60mL					
	SAMPLE ANALY	ysis	<u> </u>	Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instruct	ial /					
							3			_	Tieto:		
Sample No.	Matrix *	Sample Date	Sample Time								et <u>Alleys (more) grad</u>		
B16W82	SOIL	4/29/6	3 0900	X	1	1	<u>/</u>				BILLING	8 (W	SCF)
ļ				 -	 -		├]	 -	
					 	 -	 					 	
				 -							 		
CHAIN OF POS	SSESSION	Sign/Prin	t Names		SPE	CIAL INSTI	RUCTIO	ons as-	4/2	2/03			Matrix *
Relinquished By/Removed Relinquished By/Removed 1 B 3 7 2 S Relinquished By/Removed 5 16 ALE MAL Relinquished By/Removed Relinquished By/Removed	From Date/Time 4-28 1 1 1 1 1 1 1 1 1	red In 328 L red In Dr red In S103 Dr red In S103 Dr red In Dr red In Dr red In Dr	ate/Time - FED ate/Time	129;	n both kerosene Rechtenum-99; Nickel 63; Neg Personnel no Personnel no	t availa	, -1 -1	m WTPH-D : Upic Thorium	analysis. - {Thoriun= 3			S=Soil SE=Sediment SE=Sediment SO=Solid SI=Studge W = Water O=Oli A=Anir DS=Drum Solids Dl=Drum Liquids T=Tisme WI=Wipe L=Liquid V=Vegenation X=Other	
				Ti	itle					 -		Date/Time	<u> </u>
LABORATORY R SECTION	Received By												
FINAL SAMPLE DISPOSITION	Disposal Method					Dispo	osed By			- <u>-</u>	I	Date/Time	

FH-Central Plateau Project	CI	HAIN OF CUST	ODY/S	AMPL	E ANALY	YSIS	REQUE	ST	F03	-006-66	Page 1	of 1
Collector Johansen/Pope/Pfister		nny Contact Hulstrom	Telephor 373-39	ne No. 928		_	Project Co TRENT, SJ		Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		ing Location -A-37 (C4106); (47.5'-50	"				SAF No. F03-006		Air Quality		45 <u>-</u>	Days ————
Ice Chest No. ERC 96 055		Logbook No. F-N-3361		COA 1175041	ES10		Method of Federal B	xpress	·			
Shipped To RECRA EBERLINE SERVICES (Formerly TMA) / In 1//2	Offsite	Property No.	307	220			Bill of Lad	ing/Air Bil	INO. SEE	0500	<u>. </u>	
EBERLINE SERVICES (Formerly TMA) / // POSSIBLE SAMPLE HAZARDS/REMARKS	7-5-			Ţ								
		Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	Non	<u> </u>				
Special Handling and/or Storage		Type of Container	вG	aG	aG	a.G	₽G					
Special frauding andor Storage		No. of Container(s)	1	1	1	1						
		Volume	120mL	60mL	120mL	60m	L 60m	i,				
		L	Chromium Hex - 7196	NO2/NO3 353.2	Oil & Grease -	See item Spec		- НЭ		1		
SAMPLE ANALYSIS						Instruct	iong Joh					
						NS N	(M)		TIETO:			
Sample No. Matrix * S	ample Date	Sample Time	8			- '/			11.00.		Maria de la compansión de la compansión de la compansión de la compansión de la compansión de la compansión de	
B16W83 SOIL 4	1/24/03		X	1	*	7			BIGUE	9 (W	(F)	
·	 											
										<u> </u>		
			<u> </u>	 	_					 		
CHAIN OF POSSESSION	Sign/Prin	t Names	<u> </u>	l cp	ECIAL INSTR	UCTIO) NS	asu	dinia	<u> </u>	<u> </u>	Matrix *
CHAIN OF POSSESSION Relinquiched By/Remotord From Date/Time Poster Property Control of Property Control o	ceived By/Sto		TOTAL V	Sr.	The laboratory is port both kerosene	to achie	ve a detection-i	imit of 50.0 p	Cilgran Carbon 14.	** The laborate	ory is to	S-Soil
MODININGO MADURUMEN 4441031409	C+114	Steen 1	1102r	KLZI							d. Indian	SE=Sediment SO=Solid
Relinquished By/Removed From Date Time 1800 Re	ceived By/Sto	ICA TIL	ke/Tithe 14) - Technettum - 99; 19; Nickel-63: Nep			1 Sr, Isotopic	Thorium (Thorium-	232); Car oon-1	4, 100me -	SI=Sludge W = Water O=Oil
Relinquished By/Romoved From Bate/Time Re	ceived By/Sto	icu iii 🔺 🗀	te/Time					14	','			A=Air DS=Drum Solids DL=Drum Liquids
Pelinguished By/Removed From Date/Time Re	GALE ceived By/Sto	<u> </u>	te/Time	00								T=Tissue W!=Wipe
5/0ALE MACh 5/03 1/00		EX	ite/Time		Pe	rsonnel	not availabi	e to				L=Liquid V=Vegetation X=Other
	cceived Bu/Sto	Mills 50	-03 05	41-	reli Rei	inquish f# <i>] [</i>	samples fro	m the 3728				
Relinquished By/Removed From Date/Time Re	ceived By/Sto	fed√is D:	tte/Time				/,		, - 			
LABORATORY Received By SECTION			Ti	tle						D	Pate/Time	
FINAL SAMPLE Disposal Method DISPOSITION				_ · _ ·=	Dispo	sed By				I	Date/Time	

FH-Centra	al Plates	ODY/S	SAMPL	E ANAL	YSIS	REQUEST	Γ	FO	3-006-73	Page 1	of 1			
Collector Johansen/Pope/Pf	ister			any Contact Hulstrom	Telepho 373-3				Project Coordi TRENT, SJ	nator	Price Code	8N	Data Tu	гиагонос
Project Designation 200-PW-2/200-PV	w-4 OU - B	orehole Soil Sampling		ing Location -A-37 (C4106); (17.5'-20	r')				SAF No. F03-006		Air Qualit	у 🗆	45	Days
Ice Chest No. ER	2C 9	6 056	HN	Logbook No. F-N-3361		COA 117504E	S10		Method of Ship Federal Expr	ess				
Shipped To EDERLINE SER	RET VICES (Por	RA 1872 merty TMA) 4/22	Offsit	e Property No. A	30	220			Bill of Lading	Air Bill	No.5€€ (73 P C		
POSSIBLE SAME	PLE HAZA	RDS/REMARKS				Ţ <u></u>		T		7				
}				Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	e None					
 Special Handling	g and/or S	torage		Type of Container	aG	aG	aG	a-G	20					
		-		No. of Container(s)	1	1	1	1	1/1	<u> </u>				
				Volume	120mL	60mL	120mL	60m	L 60mL					
SAMPLE ANALYSIS						NO2/NO3 353.2	Oil & Grease - 413, L	See item Speci Instruct	ial /} .					
			0 1 70					17						1
Sample N	io.	Matrix *	Sample Date	Sample Time				7		· •				ا المسيء مسالم الأواد المسالم الأواد المسالم الأواد المسالم الأواد المسالم الأواد المسالم الأواد المسالم الأواد
B16W90		SOIL	4/28/03	1510		 X	+*-			-				<u> </u>
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CHAIN OF P	OSSESSIO		Sign/Prin		·		CIAL INSTE			742	4/22/03			Matrix *
Relinquished By/Removed From Date/Time Received By/Stored In REF A 3728 4280. Relinquished By/Removed From Date/Time Received By/Stored In Received By/Stored In Received By/Stored In SJGALC NALL S Relinquished By/Removed From Date/Time Received By/Stored In SJGALC NALL S Relinquished By/Removed From Date/Time Received By/Stored In SJGALC NALL S Relinquished By/Removed From Date/Time Received By/Stored In Received By/Stored In SIGNIFICATION FOR STORED BY/Stored In Received By/Stored In Received By/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/Stored In SIGNIFICATION FOR STORED BY/STORED						5 rep	Technotium 99, Nickel 63; Nep	Strontium-2	er a detection limit is el range compounds in 89,90 — Total Sr;	from WT. Sotopic T	PH-D analysis.	-232 }, Carb on-14		S=Soil SE=Setiment SO=Solid SI=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue WI=Wipe L=Liquid V=Vegetation X=Other
FINAL SAMPLE	Disposal Me	od .				<u> </u>	Dispo	sed By				D	ate/Time	
DISPOSITION										_				

FH-Central Plates	u Project	CI	HAIN OF CUST	ODY/S	AMPLE	ANALY	SIS	REQUEST		FO	3-006-74	Page 1	of !
Collector Johansen/Pope/Pfister		nny Contact Hulstrom	Telepho 373-3				Project Coordi TRENT, SJ	ator	Price Code	8N	Data Tu	اب	
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling		ing Location -A-37 (C4106); (0.5')					SAF No. F03-006		Air Qualit	у 🗆	45	Days -
Ice Chest No. ERC 9	6 056		Logbook No. F-N-3361		COA 117504ES	10		Method of Ship Federal Expre	SS				
Shipped To AND EBERLINE SERVICES (For	S103 RECRI	Offsite	Property No. AO	30 Z	20			Bill of Lading/	Air Bill	No.S&&	05/20		
POSSIBLE SAMPLE HAZA	RDS/REMARKS												
		!	Preservation	Cool 4C	Cool 4C								
Special Handling and/or S	Storage		Type of Container	aG	aG						<u> </u>		
			No. of Container(s)	1	1							<u> </u>	
<u> </u>			Volume	60mL	250mL								
	SAMPLE ANALY	/SIS		Pesticides - 8081	Chloro- Herbicides - EPA8151								
Sample No.	Matrix *	Sample Date	Sample Time		-								
B16W91	SOIL	4/28/03	1130	X	X								
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CHAIN OF POSSESSIO	! N	Sign/Prin	t Names		SPE	CIAL INSTRU	CTIC	DNS	<u>. </u>		<u></u>		Matrix *
Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	Date/Time /// // // // // // // // // // // // /	Received By/Stor Received By/Stor Sd GALCO Received By/Stor Received By/Stor	red in Di 3728 425 0 red in Di ford in Di ford in Di ford in Di ford in Di ford in Di ford in Di ford in Di	ate/Time 3 // ate/Time ate/Time ate/Time ate/Time	5			able to 3728 from the 3728				Date/Time	S=Soil SE=Sediment SO=Solid Si=Sludge W= Water O=Oil A=Air DS=Drunt Solids DL=Drum Liquids T=Tissue W=Wipe L=Liquid V=Vegetation X=Other
LABORATORY Received B SECTION	y 						<u></u>						
FINAL SAMPLE Disposal M DISPOSITION	lethod					Dispose	d By	·		·] 	Date/Time	

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

IENT: TNU Hamford

chase Order/Project:

DATE: 5-2-03

F#Y SOW# / Release #: FO 3-006

poratory SDG #:

03051329

TE:	ALL ENTRIES MARKED "NO" MUST BE E	EXPLAINED IN	THE COMM	ENT SECTION	·
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	D No	D N/A	□ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	D/Yes	D No	D N/A	D see Comment #
3.	Airbill # recorded?	Yes	D No	D N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	Dyres	□ No	D N/A	☐ see Comment #
5.	Sample containers are intact?	YYes	□ No	D N/A	D see Comment #
6.	Custody seals on sample containers intact, signed and dated?	Yes .	□ No	D N/A	□ see Comment #
7.	All samples on coc received?	Yes	□ No	D N/A	✓ □ see Comment #
8,	All sample label information matches coc?	D/Yes	□ No	□ N/A·	D see Comment#
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	DNA	D see Comment #
10	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	y Yes	□ No	D N/A	□ see Comment #
11	Where applicable, bar code labels are affixed to coc?	C Yes	□ No	DANIA	☐ see Comment #
12	. coc signed and dated?	Yes	D No	□ N/A	See Comment #
13	. coc will be faxed or emailed to client?	TY Yes-	Ū No	D N/A	□ see Comment #
14	. Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	, DNo	BNIA	D see Comment #

Cooler # / temp (°C) and Comments:

ELC 96-056 / 1.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dignion

Lionville Laboratory, Inc. PCB ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	LVL	# MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	S	03LE0576	04/28/03	05/14/03	05/21/03
B16W80	002	S	03LE0576		05/14/03	05/21/03
B16W81	003	S	03LE0576	04/29/03	05/14/03	05/21/03
B16W81	003	MS S	03LE0576	04/29/03	05/14/03	05/21/03
B16W81	003	MSD S	03LE0576	04/29/03	05/14/03	05/21/03
B16W82	004	S	03LE0576	04/29/03	05/14/03	05/21/03
B16W83	005	S	03LE0576	04/29/03	05/14/03	05/21/03
B16W90	006	S	03LE0576	04/28/03	05/14/03	05/21/03
LAB QC:						
PBLKTS	MB1	S	03LE0576	N/A	05/14/03	05/22/03
PBLKTS	MB1	BS S	03LE0576	N/A	05/14/03	05/22/03



genlide



Analytical Report

Client: TNU-HANFORD F03-006

LVL#: 0305L329

SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00

Date Received: 05-02-2003

PCB

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were extracted on 05-14-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-21,22-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8082 for Aroclors only.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. Samples were extracted outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 3. Samples and their associated QC samples received a Sulfuric Acid and Sulfur cleanup.
- 4. The method blank was below the reporting limits for all target compounds.
- 5. One (1) of twenty (20) surrogate recoveries was outside acceptance criteria. However, EPA CLP surrogate recovery criteria were met (i.e., no more than one outlier per sample).
- 6. The blank spike recoveries were within acceptance criteria.
- 7. All matrix spike recoveries were within acceptance criteria.
- 8. All initial calibrations associated with this data set were within acceptance criteria.
- 9. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Lain Daniels (Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\pest\tnu hanford\0305-329.pcb

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 5 pages.

Batch: 0305 4324. Parameter: OPCB. Initiator: 13ha Lach. Samples: 1~6. Soil Matrix: 6/17/03 Date: Method: SW846/MCAWW/CLP/ Prep Batch: 03LEOS)6 Client: TNU 1. Reason for SDR a. COC Discrepancy __ Tech Profile Error __ Client Request __ Sampler Error on C-O-C __ Transcription Error __ Wrong Test Code __ Other ___ b. General Discrepancy __ Missing Sample/Extract __ Container Broken __ Insufficient Sample __ Label ID's Illegible __ Wrong Sample Pulled __ Hold Time Exceeded __ Preservation Wrong ___ Received Past Hold Improper Bottle Type Not Amenable to Analysis Note : Verified by [Log-In] or [Prep Group] (circle)...signature/date: ____ c. Problem (Include all relevant specific results; attach data if necessary) samples extracted 2 Days Post hold. 2. Known or Probable Causes(s) Other Description: 3. Discussion and Proposed Action Re-log __ Entire Batch Narutt. Following Samples: Re-leach __ Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle) 4. Project Manager Instructions...signature/date: _ Concur with Proposed Action Disagree with Proposed Action; See Instruction __ Include in Case Narrative Client Contacted: Date/Person Add Cancel 5. Final Action...signature/date: 54117 / 54 Other Explanation: __Verified re-[log][leach][extract][digest][analysis] (circle) Included in Case Narrative Hard Copy COC Revised Electronic COC Revised EDD Corrections Completed When Final Action has been recorded, forward original to QA Specialist for distribution and filing. Route Distribution of Completed SDR Route Distribution of Completed SDR __ Metals: Beegle X Initiator __ Inorganic: Perrone X Lab General Manager: M. Taylor __ GC/LC: Kiger X Project Mgr: Stone/Johnson/Haslett __ MS: Rychlak/Layman X Technical Mgr: Wesson/Daniels __ Log-in: Melnic X QA (file) Admin: Soos Data Management: Feldman Other: Sample Prep: Beegle/Kiger

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0364 205.



GLOSSARY OF PESTICIDE/PCB DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- DF = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF PESTICIDE/PCB DATA

- This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form 1 and flagged with a "P".
- This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

R:/SHARE/HPLO/PESTICIDE/PCBGLOS

5

RFW Batch Number: 0305L329

Aroclor-1260

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1

16 U

96

102

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16 U

B16W81 B16W82 B16W81 B16W81 Cust ID: B16W79 B16W80 003 003 MS 003 MSD 004 RFW#: 001 002 Sample SOIL SOIL SOIL SOIL Information Matrix: SOIL SOIL 1.00 1.00 1.00 1.00 1.00 D.F.: 1.00 UG/KG UG/KG UG/KG UG/KG Units: UG/KG UG/KG Decachlorobiphenyl 왐 95 ક 105 웋 95 옿 105 왐 왐 90 Surrogate: 100 뫔 90 85 왐 90 왕 85 Tetrachloro-m-xylene 60 옿 75 왐 16 U 16 U 16 U 98 ž 96 કૃ 16 U Aroclor-1016 16 U 16 U 16 U 16 U 16 U Aroclor-1221 16 U 16 U 16 U 16 U 16 U 16 U 16 U Aroclor-1232 16 U 16 U 16 U 16 U 16 U Aroclor-1242 16 U 16 U 16 U 16 U 16 U 16 U 16 U Aroclor-1248 16 U 16 U 16 U 16 U 16 ปี Aroclor-1254 16 U

16 U

16 U

	Cust ID:	B16W83	B16W90	PBLKTS	PBLKTS BS	
Sample	R FW#:	005	006	03LE0576-MB1	03LE0576-MB	1
Information	Matrix:	SOIL	SOIL	SOIL	SOIL	
	D.F.:	1.00	1.00	1.00	1.00	
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	
Surrogate:	Decachlorobiphenyl	120 %	100	105 %	100	*
	Tetrachloro-m-xylene	120 * %	90 5	s 85 %	85	%
	-	======fl=		1======f	1========	fl=======fl=======fl
Aroclor-1016	;	16 U	16	J 15 T	92	%
Aroclor-1221	•	16 U	16	J 15 T	15	U /A
Aroclor-1232		16 U	16 T	J 15 T	15	ʊ <u>, </u>
Aroclor-1242		16 U	16	J 15 U	15	U AM
Aroclor-1248		16 U	16	J 15 T	15	n Atheria
Aroclor-1254	:	16 U	16	J 15 T	15	Ū į
Aroclor-1260		16 U	16	J 15 T	94	*

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page ____ of ____

0305L329	FIELD PERSON
	1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS



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Client	ñu-	Hanford	F03	000 P		Retrige	rator #				2	<u>a</u>			}		·	а	9	5		$-\!$	ユ
Est. Final Pro	j. Samj	pling Date	<u>-</u>		 	#/Type	Container	Liquid														+	
		-6000-C		900				Solid			iPG!	186						JAG.	DOG.	180			
Project Conta					_ 	i Volume	,	Liquid														++-	
Lionville Labo	oratory	Project Mana	ger 🔼					Solid			(10)	860					ļ.,	∞	CO	190			
oc Spac		Del <u>2740</u>	TAT	30 day		Presen	/atives	1		ORGA	-	-				INO	PC.	-	-			- -	
				6-16-03		ANALY		->			Pest/	ę			.	Metal	20	1					
Date Rec'd	<u> </u>	2-03	Date Due	-60103	2 2/4/07	REQUE	:2150		ΛΟΛ	BNA	유입	Į Đ					نــــــــــــــــــــــــــــــــــــــ						_
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S - Soil SE - Sediment	Lab ID		Client ID/Descr	iption	QC Chosen (V)	Matrix	Date Collected	Time Collected			H BOTO	SHBG K						ICRO	INSOR	ICGGR			
SO - Solid SL - Sludge		<u> </u>			MS MSD	<u> </u>	<u> </u>		<u> </u>		~ 건	ā						17	1+	Ħ		- -	
W - Water O - Oil	COL	Brein	9			5	4-28-03	13540	<u> </u>								 	<u></u>	1			₩.	
A - Air DS - Drum	500	1 1 1	<u> </u>			<u> </u>	1	1510	<u> </u>							<u>.</u> .	ļ	<u></u>				+	
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Liquids L - EP/TCLP	X4		88					0900	<u> </u>			!					<u> </u>	<u></u>					
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X - Other F - Fish	200		90				4-28-03	1510	<u> </u>														
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Special Instruc	tions:	Pru M	otrix C	<u> </u>	DATE	/REVISIO	ns:	rl 'L .		> 1	 L		a >					Lionvi	ile Lab	oratory	Use Onl	iy	
Sast #	Foz	>∞¢			_ 5,	mples	2041 →	-006	Add	Ag.	As, 3.	B	Be B:			' } H;	and De	were: ed — divered		1)	mper Resist Present o ckage	on Oute	r
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FH-Centra	l Plateau Project	CH	IAIN OF CUST	CODY/S.	AMPL	E ANALY	YSIS	REQUEST	1	F03-006-62	Page 1	ot 1
Collector Johansen/Pope/Pfis	ster		ny Contact Iulstrom	Telephor 373-39				Project Coordin TRENT, SJ	Price Code	: 8N		rnaround
Project Designation 200-PW-2/200-PW	/-4 OU - Borehole Soil Sampling		ng Location A-37 (C4106); (12.5'-15	5')				SAF No. F03-006	Air Qual	ity 🗌	45)	Day
Ice Chest No. EX	20 96 054		ogbook No. -N-3361		COA 117504E	E\$10		Method of Shipn Federal Expres				
Shipped To EDERLINE SERV	RECKA (ICES (Formerly TMA)	4/22/03 Offsite	Property No. A	030	22	-0	_	Bill of Lading/A	ir Bill No. S	EOSPE	_	
	LE HAZARDS/REMARKS			1				7			1	!
		!	Preservation	Cool 4C	Cnol 4C		Non	/_				
Special Handling	and/or Storage	1	Type of Container	aG	aG .	aG	#G	9			<u> </u>	
		•	No. of Container(s)	120-1	1 40-1	120-1	1	//			ļ	
			Volume	120mL	60mL	120mL	60m	/				
				Chromium Hex - 7196	NO2/NO3 353,2	- Oil & Grease - 413,1	See item Specia	ĭ/ [1		Ì	
	SAMPLE ANAI	LYSIS						/ (b	}			
			·				N.	1/2				
Sample No	Matrix *	Sample Date	Sample Time									
B16W79	SOIL	4/2.8/03	1353	1	+	X						
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Relinquished By/Remove	1 CT 1/-1	Received By/Store	nd in Da 128 42803	ite/Time 1645					om WTPH-D analysis.		ory is to	S-Soil SE-Sediment
Greg therense				ite/Time		Tarkerium 00.	Strontium 2	1.89 90 _ Total Sr Je	otopic Thorium (Thori	ors 2321: Carbon L	4: Indina	SO=Solid SI=Sludge
Relinquished By/Remove	3728 5103 110	Received By/Ston	~ ~ // //	03 110	125 مور	7; Nickel-63; Nept	ນນາເມນາ-2	7 Agr 4	22/02		·,	W = Water O=Qil
Relinquished By/Remove	d From Date/Time	Received By/Store		ite/Time				ary l				A=Ass DS=Drum Solids DL=Drum Liquids
Relinquished By/Remove	d From Date/Time	Received By Stor		ote/Time → 03 O	9.,							T=Tissue WI≈Wipe
Relinquished By/Remove	5 1 03 0947 d From Date/Time	Received By/Stor	d In Da	ate/Time	1 .	Personnel not	availabl	le to om the 372 <u>8</u>				L=Liquid V=Vegetation X=Other
Relinquished By/Remove	d From Date/Time	Received By/Store	d In Da	ste/Time		relinquish sam Ref # <u>IP</u> or	<u>. 3</u>	1_1_03				
LABORATORY SECTION	Received By			Titl						Đ	ate/Time	
FINAL SAMPLE DISPOSITION	Disposal Method					Dispos	sed By			T	Date/Time	

Characteriory Proper Priser Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description Samples Description	FH-Central Pla	teau Project	CI	HAIN OF CUST	ODY/S	SAMPLE ANALYSIS REQUEST F03-006-63 Page							Page <u>i</u>	of <u>l</u>
Project Designation Project Designation	Collector Johansen/Pope/Pfister									nator	Price Code	8N		-
Shipped To — EEEEA — CERRENT STRUCTURY THAT - Apr	Project Designation 200-PW-2/200-PW-4 OU	- Borehole Soil Sampling	Sampl 216	ing Location -A-37 (C4106); (17.5'-20	יי					1	Air Quality	<i>'</i> 🗆	45	Days\
Freservation Cost 4C	Ice Chest No. TR C	· -					S10		Federal Expre	ss				
Special Handling and/or Storage Type of Container at Section 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Shipped To EBERLINE SERVICES		72/02 Offsite	Property No.	403	02	20		Bill of Lading	Air Bill N	0. SEE	- 0390	<u>د</u>	
Special Handling and/or Storage Type of Container Type of Container No. of Container No. of Container Volume 120mL Short Correction Hat - 1196 Sample No. Matrix * Sample Date Sample Time B169/880 SOIL L/[78] 03 15 Lo T Selinguished by/Surroved From Distriction Selinguished by/Surroved From Distriction Distriction Distriction 1 - 2 - 2 - 3 - 2 - 3 - 3 - 3 - 3 - 3 - 3	POSSIBLE SAMPLE HA	ZARDS/REMARKS				0140	0-140		/		1	}	1	
Special Handling and/or Storage Type of Container(s) No. of Container(s) Volume 120mL Volume 120mL Concision NO27031 Gal A Greace: See sen (1) is Special Hart - 1196 SSAMPLE ANALYSIS SAMPLE ANALYSIS				Preservation	Cool 4C	C0014C	Cool 4C	None	e Mone			<u> </u>	<u> </u>	
SAMPLE ANALYSIS No. of Container(s) Volume 120mL 60mL 120mL 60mL 60mL 120mL 60mL 60mL 120mL 60mL Cossiel Wandling and/	or Storage		Type of Container	вG	aG	aG	aG	act	}	_	<u> </u>	<u> </u>		
SAMPLE ANALYSIS Sample No. Matrix * Sample Date Sample Time B16W80 SOIL U[76] 03 15 L9 7 X X CHAIN OF POSSESSION Selected by Secretary By Secret	Special tranding and	or Storage		No. of Container(s)	}	1	1	1	1					
SAMPLE ANALYSIS Sample No. Matrix * Sample Date Sample Time B16W80 SOIL 4/78 63 SUA 7 X X B16W80 SOIL 4/78 63 SUA 7 X X MATRIX B16W80 SOIL 4/78 63 SUA 7 X X MATRIX B16W80 Sign/Frint Names Calinopaided By/Removed From B16W80 Relinopaided By/Removed From B16W80 Relinopaided By/Removed From Date/Time Calinopaided By/Removed From Date/Time Date/Time Date/Time Date/Time Received By/Stored In Date/Time SJ GALE AV J Date/Time Received By/Stored In Date/Time Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Date/Time Received By/Stored In Date/Time Da				Volume	120mL	60mL	120mL	60m	L 60mL					
Sample No. Matrix * Sample Date Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne SAMPLE Of Sold Sold Sold Sold Sold Sold Sold Inne Sign/Print Names Sign/Print Names Special Instructions After 4/121/1 Matrix * Special Instructions After 4/121/1 Special Instructions After 4/121/1 Special Instructions After 4/121/1 Special Instructions After 4/121/1 Special Instructions After 4/121/1 After 4/121/1 Special Instructions After 4/121/1 After 5/121/1 After 5/121/1 Special Instructions After 4/121/1 After 5/121/1 Afte		SAMPLE ANALY	'SIS					Specia	i' /					
Sample No. Matrix * Sample Date Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne Sample Inne SPECIAL INSTRUCTIONS After 4/12/01 After 4/12/01 Matrix * Self-inne Special Instructions After 4/12/01 Matrix * Special Instructions After 4/12/01 Matrix * Special Instructions After 4/12/01 Special Instructions After 4/12/01 Matrix * Special Instructions After 4/12/01 Special Instructions After 4/12/01 Matrix * Special Instructions After 4/12/01 After 4/12/01 Matrix * Special Instructions After 4/12/01 After 4/12/01 Matrix * Special Instructions After 4/12/01 After 4/12/01 After 4/12/01 Matrix * Special Instructions After 4/12/01 After 4/1						<u> </u>		1/2	પા		<u> </u>		<u> </u>	
CHAIN OF POSSESSION Sign/Frint Names Relinquished By/Removed From Date/Time Relinquished By/Removed From Date/Time SJGALE 100 10	Sample No.	Matrix *	Sample Date	Sample Time						: 1	3			
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time SJGALE SJG	B16W80	SOIL	4/28/03	1510	*	X	X	<u> </u>				<u> </u>	 	
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time SJGALE SJG					 	<u> </u>		 			 -		 -	
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time SJGALE SJG					ļ	 		 -				 	 	
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time SJGALE SJG	<u> </u>				 	 		 -				 	 	}
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Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Date/Time Date/Time Date/Time Received By/Stored In Date/Time D		Date/Time /6 45	Received By/Stor	ed In Da			The laboratory is	to auhiev	e a detection limit (£50.0 pCi/g	for Carbon-14.		tory is to	i 1
Received By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time D			REF IA	3728 42803		`					-			SO=Solid
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Dat	Relinquished By/Removed From	Date/Time		- · ·		1	Technetium 99; : Nickel-63: Ner	Strontium otunium-23				232); Carbon-1	14; Ioolne-	W = Water
SJEALE Actor 5103 FED EX Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Ref # 15 on 5 / 1 / 03 Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Ref # 15 on 5 / 1 / 03 LABORATORY Received By Title Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time									- 4 gr	- 7/	2703			A=Air
Relinquished By/Removed from Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Ref # A on 5 / 1 / 03 Relinquished By/Removed From Date/Time Received By/Stored In Date/Time LABORATORY SECTION FINAL SAMPLE Disposal Method Received By/Stored In Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time	SJEALE XIL	Hale 5103												OC=Orum Liquids
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Personnel Not available to relinquish samples from the 3728 Ref # A on 2 / 1 / 0 2 LABORATORY SECTION Title Disposal Method Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time	Relinquished By/Removed From		17 74 77		-									WI=Wipe
Relinquished By/Removed From Date/Time Title Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Disposed By Date/Time	Relinquished By/Removed From					7								V=Vegetation
SECTION FINAL SAMPLE Disposal Method Disposed By Date/Time	Relinquished By/Removed From	Date/Time	Received By/Stor	ed in Da	ate/Time		Ref# / PT	on <u>5</u>	1_1_03					
FINAL SAMPLE Disposal Method Disposed By Date/Time	The Canal Annual Control	ed By	<u>.L</u>		Ti	tle						ľ	Date/Time	•
1 MADE W4541	FINAL SAMPLE Dispos	al Method			 _		Dispo	esed By				1	Date/Time	

FH-Central Plateau Project								<u>' </u>	F0:	3-006-64	Page 1	of 1
Collector Johansen/Pope/Pfister		ny Contact ulstrom	Telephone 373-392	No. 28			Project Coordi TRENT, SJ	ator	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		ng Location A-37 (C4106); (27.5'-30	n)				SAF No. F03-006	A	Air Quality		45	Days_
Ice Chest No. ER C 96 0 56		ogbook No. -N-3361		COA 117504ES	10		Method of Ship Federal Expre	ss				
Shipped To EBERLINE SERVICES (Formerly TMA) Agr 4)	Offsite	Property No.	030	220	2		Bill of Lading/	Air Bill N	. 30E	037		
POSSIBLE SAMPLE HAZARDS/REMARKS	7					1		/	[[[{
		Preservation	Cool 4C	Cool 4C	Cool 4C	None			 	ļ		
Special Handling and/or Storage		Type of Container	aG 1	aG	aG	aG	- 6		 	ļ		
	1	No. of Container(s)		<u> </u>		<u> </u>	_ /	<u> </u>	 		<u> </u>	
		Volume	120mL	60mL	120mL	60ml	60mL		<u> </u>			
			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (Specia		_				
SAMPLE ANALYS	SIS					Instructi	ms. 1 13		1			
						1.30	\ ² ^		()	h _		
			[]			<u> </u>	·		1	ILTO		<u> </u>
Sample No. Matrix *	Sample Date	Sample Time				rgaanta. Dameetaa		ر. فــــــــــــــــــــــــــــــــــــ				
B16W81 SOIL	4/29/03	0 745	*	*	K	<u>/</u>				Bluw	17 (4	ISCF)
									<u> </u>	<u>l </u>		
CHAIN OF POSSESSION	Sign/Print			SPEC	IAL INSTE	RUCTIO	NS 182	4/22/	0}	*****		Matrix *
Relinquished By/Retraved From Date/Time			129/03/4		ne laboratory is t both kerosene	s to acmev e and diese	e a desection limit o	from WTPH	107 Caroon-149. I-D analysis.	The laborate	ory is to	S=Soil SE=Sediment
Relinguished By/Removed From Dale/Time	Received By/Store	R-f. hiber 4			echnatium 99	Strontium	-89,90 — Тош Sr, 1	sotopic Thu	rium (Thorium-	732) : Carbon 1	4: Indine	SO=Solid SI=Studge
Coo p 116 - 4 C1 &3	1B		+ a3		Nickel-63: Net					,,,	•	W = Water O=Oil
Relinquished By/Kemoved From	Received By/Store	사비 # # <u>- </u>	ate/Time	106			77	• •				A=Air DS=Drum Solids
1B 3728 51 03 1/00 Palinquished By/Removed From Date/Time	SJGA Received By/Store		5 / 03 /									DL=Drum Liquids T=Tissue
Relinquished By/Removed From Date/Time SIGAUSIAN 5103 1100	1	2X	no i uno									WI=Wipc L=Liquki
Refinancished By/Removed From Date/Time	Received By/Store	antin Da	nte/Time · 03 09:√	Pe rel	rsonnel not	available	e to m the 3728					V=Vegetation X=Other
Relinquished By/Removed From Date/Time	Received By/Store		ate/Time	Re	f#/ B _or	1_5_/	m the 3728 1/ 03					
LABORATORY Received By SECTION	<u> </u>		Title	<u></u> ;						D	ate/Time	1

FH-Central Plateau Project	CI	IAIN OF CUST	ODY/S	AMPLE	ANALY	<u>YSIS</u>	REQUEST		F03-006-65	Page 1	of 1
Collector Johansen/Pope/Pfister	Compa LC I	ny Contact Iulstrom	Telepho 373-3				Project Coordinate TRENT, SJ	or Price	Code 8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		ng Location A-37 (C4106); (37.5'-40)')				SAF No. F03-006	Air Q	Quality 🗌	45 1	Days
Ice Chest No. ERC 9.6 055		ogbook No. F-N-3361	•	COA 117504ES	0		Method of Shipme Federal Express		·		
Shipped To EBERLING SERVICES (Formerly TMA) 4/21/0]	Offsite	Property No.	030	222	·		Bill of Lading/Air	Bill No.	185 OSPC		
POSSIBLE SAMPLE HAZARDS/REMARKS					_		1				
		Preservation	Cool 4C	Cool 4C	Cool 4C	Non	Me None				
Special Handling and/or Storage		Type of Container	аĢ	aG	aG	•0	29				
Special Handling and/or Storage		No. of Container(s)	1	1	1	1					
		Volume	120mL	60mL	120mL	60m	nL 60mL				
<u> </u>			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See stem Spec	الفن				
SAMPLE ANALYSIS			ļ		ĺ	Instruc	ion.				
						1 1	1/1/2		Tieto:		
Sample No. Matrix * Sa	mple Date	Sample Time				. 77 . ——.	1				4
B16W82 SOIL 4	129/0	3 0900	X	1	7	<u></u>			BILLING	8 (W	SCF)
				 		<u> </u>	_			 _	
			-	 	 	-					 -
			 	+							
CHAIN OF POSSESSION	Sign/Prin	t Names		SPEC	LAL INSTE	RUCTIO	ONS ABY	4/22			Matrix *
Relinantished By/Removed From Date/Time Rec	eived By/Stor		MAZIC	report	both kerosen	s to achie and die:	ve a detection finit of 30 sel range compounds fro	0.0 pCi/g for G m WTPH-D an	arbon 14:- ** The laborate allysis.	ory is to	S=Soit SB=Sediment
Relinguished By/Removed From Date/Time 4-CRec			ate/Time	() () (echnetium-99;	Stronge	m-89,90 Total Sr, iso	opi c Thorium ((Thorisme 232); Garbon 1	4 ; Iodine-	SO=Solid SI=Studge
R Fda R f. Hb - 4-2900	113	3728 1	+· 09·	129;1	Nickel-63; Nep	stunium-2	137 18gr	4/22/	05		O=Oil W = Water
Relinquished By/Kemoved From Date Time Rec	eived By/Stor	EU III	ate/Time 03 1	100							A=Air DS=Dnum Solids DL=Dnum Liquids
			ate/Time	100							T=Ticase W!=Wipe
510ALE MACL 5 103 1100 1=	کا ۸ ن د ک	Jul 510		EX P	ersonnel no	t availa	ble to				L-Liquid V=Vegetation
Relinfruished By/Kemoyed From Date/Time Rec	cived By Stor		ate/Time	ogys R	linquish sar ef#_ <i>D</i> o	mples fi nn <u>ろ</u>	rom the 3728			*	X=Other
	cived By/Sun		ate/Time								
LABORATORY Received By SECTION			Т	itle			<u> </u>		D	atc/Time	
FINAL SAMPLE Disposal Method DISPOSITION					Dispo	osed By			[Date/Time	

FH-Central	Plateau Project	CI	HAIN OF CUST	ODY/S	AMPLI	EANAL	YSIS	REQUE	ST	F03	-006-66	Page 1	of 1
Collector Johansen/Pope/Pfiste	er	Compa LC	any Contact Hulstrom	Telephor 373-39				Project Coo TRENT, SJ	rdinator	Price Code	8N		rnaroung
Project Designation 200-PW-2/200-PW-4	4 OU - Borehole Soil Sampling		ing Location -A-37 (C4106); (47.5'-50	ກ				SAF No. F03-006		Air Quality		45 l	Days
Ice Chest No. ER	C 96 055		Logbook No. F-N-3361		COA 117504ES	10		Method of S Federal E	xpress	·			! !
Shipped To EBERLINE SERVICE	RECRA CES (FORMERLY TMA) IM		Property No.	302	20			Bill of Lad	ing/Air Bill	INO. SEE	05PC		
POSSIBLE SAMPLI	E HAZARDS/REMARKS	41.1.				Ţ		-		1	1 1		1
			Preservation	Cool 4C	Cool 4C	Cool 4C	Non		4_				
Special Handling a	nd/or Storage		Type of Container	aG	aG	aG	aG	*G					
•			No. of Container(s)	 	1	\	1						
			Volume	120mL	60mL	120mL	60m	L 60mi	·	ļ	1		
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci	-i / Ι	Н3				
	SAMPLE ANAI					Instruct	7 No.			} {]	
			<u> </u>			P.	W		TIETO:				
Sample No.	Matrix *	Sample Date	Sample Time						- :				
B16W83	SOIL	4/29/03	1020	1	7	+	<u>/</u>			BIGUE	9 CW	XF)	
		<u> </u>				<u> </u>	<u> </u>						
! 					 	 							
						 -			_				
CHAIN OF POS	SSESSION	Sign/Prin	t Names	l	SPE	CIAL INSTE	UCTIO)NS ve a detection li	98r	4/24/03	<u> </u>		Matrix *
Relinquished By/Remdyd	From Date/Time	Received By/Stor	, 1	MAZ I	N repor	he laboratory is t both kerosene	wachie and dies	re a detection li el range compo	nic of 50.0 pC inds from WI	City for Calbon 14. IPH-D analysis.	** The laborato	ry is to	S=Sol) SE=Sediment
Relinquished By/Removed		Received By/Sto		te/Time	W					Thorium {Thorium-2	32); Carbon-1 4	; Iodine-	SO=Solid Si=Studge
K.FOCE R	Sfahlb - 4.290	5 1B	37ZQ 4.	19-0	3 129;	Nickel-63: Nep	nunium-2	37	984	4/22/03			W = Watcr C=Oil A+Air
Relinquished By/Ramoved	From DeleTime	Received By/Stor		11 6 Time	00				•	•			DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed	From Date/Time 5 1 0 3 1/0	Received By/Stor	red in Da	te/Time		n_							T=Tistuc W =Wipe L=Liquid
Relinquished By/Removed	ed In. Da	te/Time 1-03 054		rej rej	rsonnel inquish	not available samples from	to 1 the 3729				V=Vegetation X=Other		
Relinquished By/Removed From Date/Time Received By/Stored In						Kei	"# ~ 0	Lon_5/_	1/03	- -			
LABORATORY Re	eccived By			Tit	le						Da	ite/Time	• • • • • • • • • • • • • • • • • • •
	Pisposal Method		 			Dispo	sed By			 ,	D	ate/Time	
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FH-Central Plat	teau Project	CI	IAIN OF CUST	ODY/S	SAMPI	LE ANAL	YSIS	REQUEST		F0:	3-006-73	Page 1	of 1
Collector Johansen/Pope/Pfister			iny Contact Julstrom	Telepho 373-3				Project Coordin TRENT, SJ	ator	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU	- Borehole Soil Sampling		ing Location -A-37 (C4106); (17.5'-20))	. <u>.</u>	·		SAF No. F03-006		Air Quality	⁷ 🗆	45	Days
Ice Chest No. FR C	96 056	· (HNI	Logbook No. F-N-3361		COA 117504	ES10		Method of Ship Federal Expre					
Shipped To P. C. (CES)	FORMAL 4812	Offsite	Property No.	30	220	D		Bill of Lading/	Air Bill !	na sæ o	390	· - - ·	
POSSIBLE SAMPLE HA	ZARDS/REMARKS						T		,				
			Preservation	Cool 4C	Cool 4	C Cool 4C	Nor	E None	i			,	1
Special Handling and/o	er Storage		Type of Container	аG	aG	aG	aG	29					
Opecial Handling and/o	i Storage		No. of Container(s)	1	1	1	1	1					
			Volume	120mL	60mL	. 120mL	60m	L 60mL			1		
				Chromium Hex - 7196	NO2/NO: 353.2		See item Speci	ii /					
	SAMPLE ANALYSIS				ľ		Instruct	1007 10 7 11.12					
					}		l Ay	(1)		1			[
Sample No.	Matrix *	Sample Date	Sample Time	(91 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									3
B16W90	SOIL	4/28/03	1510	X	X	X	V_{-}						
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					 	-}	}			 	 		 -
	- 			 -	╁		 			 	 		
CHAIN OF POSSESS	SION	Sign/Print	 N≇mes	<u> </u>	I SF	ECIAL INST	RUCTIO	DNS 6	142	4/22/03	ــــــــــــــــــــــــــــــــــــــ		Matrix *
Relinquished Dy/Removed From		Received By/Store	ed In Da	ite/Time		The laboratory	s to achic	e a detection lunit of	50.0 pC1/	g for Carbon-14.	** The laborato	ry is to	S=Soil SE=Sedimen
Relinquished By/Removed From	Date/Time	Received By/Store	3728 42803	16 Y.		* \ Technotium 99	Suntin	- 89,90 Total Sr; I	woric Th	orlant (Thorsum-	712) - Carbon_14	· Indine-	SO-Solid SI-Shalge
REF IA 3728		SUGAL	SINCE 51	03 11	00 1	29; Nickel 63; Ne	otunium-2	12- 482	4/22	(0)	,,	,,	W = Water O=Oil
Relinquished By/Remoyed,From	Date/Time	Received By/Stor	edah Da	nte/Time									A=Ale DS=Drum Solids
DICALE Affil	5 / 03 1100 Date/Time	Received By/S/on		nte/Time									DL=Drum Liquids T=Tissue
Relinquished By/Rephoved From	5.2.03 09-15	Received By Stor	yq <u>uu</u> —	-03 09	41								WI=Wipe L=Liquid
Relinquished By/Removed From	Received By/Stor		te/Time		Personnel	not avai	lable to from the 3728_					V=Vegetation X=Other	
Relinquished By/Removed From	Received By/Store	ed In Da	nte/Time		Ref #	on_2	from the 3728						
LABORATORY Received	d By	<u> </u>		Ti	ide						Da	te/Time	<u> </u>
FINAL SAMPLE Disposal Method DISPOSITION				 -		Disp	osed By				Di	ate/Time	
L													

FH-Central	Plateau Project	CI	HAIN OF CUST	CODY/S	SAMPI	LE A	NALYS	SIS I	REQUEST	<u>r</u>	<u> </u>	U3-UU0-74	, nër T	<u> </u>	
Collector Johansen/Pope/Pfist	ter		Compa LC 1	nny Contact Hulstrom	Telepho 373-3	ne No. 928				Project Coord TRENT, SJ	inator	Price Code	8N	Data Tu	- \
Project Designation 200-PW-2/200-PW	-4 OU - Borehole Soil Sampling			ing Location -A-37 (C4106); (0.5')					1.	SAF No. 703-006		Air Quali	ty 🗌	45 !	Days 🔾
Ice Chest No. ER	c 96 056			Logbook No. F-N-3361		COA 117504	ES10		- }	Method of Ship Federal Expr	ess	• -		·	
Shipped To BERLINE SERV	MS103 RECR	Α.	Offsite	Property No. AO	30 Z	20				Bill of Lading	/Air Bill	1No.5 &	05/		·
POSSIBLE SAMPI	E HAZARDS/REMARKS			Preservation	Cool 4C	Cool 40	c								
Special Handling	and/or Storage			Type of Container	aG	aG									
i				No. of Container(s)	1	1								_	
				Volume	60mL	250mI				<u> </u>					
SAMPLE ANALYSIS					Pesticides - 8081	Chloro- Herbicide ÉPA815	s -								
Sample No. Matrix * Sa			nple Date	Sample Time		المحروب المراجعة الشعارة عالم المحاجعة									
B16W91	SOIL	4/2	· \$ 03	1130	X	X					<u> </u>				
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CHAIN OF PO			Sigo/Prin			SP	PECIAL	INSTRU	CTIO	NS					Matrix *
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Relinquished By/Remove	Date/Time 5 / 0/3 //00	Recei	ived By/Stol	red in Di	ate/Time										A=Air DS=Drush Solids DL=Drush Liquids T=Tissue
Resinguished Byricemoved From 5.2.03 0145 Delmin 5.					ate/Time 03 <u>Ć</u> ate/Time	1545	pers	onnel not navish sar	availal	ole to 3728 from the 3728	2				WInWipe L=Liquid V=Vegetation X=Other
					ate/Time		reli Re	nquis.	on <u></u>						
LABORATORY SECTION	Received By	,l., .			ī	itle								Date/Time	
FINAL SAMPLE Disposal Method D															

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

LIENT: TNU Hamford

irchase Order/Project:

DATE: 5.2.03

AF#Y SOW#/Release #: FO3-006

aboratory SDG #:

03051329

TE:	ALL ENTRIES MARKED "NO" MUST BE I		THE COMM	ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	, DNo .	□ N/A	See Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes .	□ No	D N/A	See Comment #
3.	Airbill # recorded?	Yes	□ No	D N/A	D see Comment
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	Dyves	□ No	□ N/A	□ see Comment #
5.	Sample containers are intact?	757.765	D No	□ N/A	D see Comment
6.	Custody seals on sample containers intact, signed and dated?	DYes	□ No	D N/A	☐ see Comment
7.	All samples on coc received?	D'Yes	D No	DNA	· D see Comment
8.	All sample label information matches coc?	D/Yes	□ No	□ N/A·	D see Comment
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	DNA	🗆 see Comment
10	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	Yes	□ No	D N/A	☐ see Commen
11	. Where applicable, bar code labels are affixed to coc?	D Yes	□ No	DONIA	🗆 sec Commen
12	. coc signed and dated?	Yes	D No	□ N/A	☐ see Commer
13	. coc will be faxed or emailed to client?	EYes.	□ No	D N/A	🗅 see Comme
14	. Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	_ □ No	E N/A	🖸 see Comme

Cooler # / temp (°C) and Comments:

Elc 96.056 / 13"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dignion

15

Lionville Laboratory, Inc. GRO ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID	LVL	# MT	X PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	s	03LVJ515	04/28/03	N/A	06/15/03
B16W80	002	S	03LVJ515	04/28/03	N/A	06/15/03
B16W81	003	S	03LVJ515	04/29/03	N/A	06/15/03
B16W82	004	S	03LVJ515	04/29/03	N/A	06/15/03
B16W82	004	MS S	03LVJ515	04/29/03	N/A	06/15/03
B16W82	004	MSD S	03LVJ515	04/29/03	N/A	06/15/03
B16W83	005	S	03LVJ515	04/29/03	N/A	06/15/03
B16W90	006	S	03LVJ515	04/28/03	N/A	06/15/03
LAB QC:						
TBLKIZ	MB1	S	03LVJ515	N/A	N/A	06/15/03
TBLKIZ	MB1	BS S	03LVJ515	· · · · · · · · · · · · · · · · · · ·	N/A	06/15/03



April of 3



Analytical Report

Client: TNU-HANFORD F03-006

LVL#: 0305L329

SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00

Date Received: 05-02-2003

GRO

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were analyzed according to Lionville Laboratory OPs based on SW-846 method 8015 for Gasoline Range Organics (GRO) on 06-15-2003. The analysis met the intent of method WTPH-G.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
- 2. Samples were analyzed outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. The blank spike recovery was within acceptance criteria.
- 6. The matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Igin Daniels

Laboratory Manager

Lionville Laboratory Incorporated

som\r\group\data\gro\tnu-hanford\0305-329.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 5 pages.

Lionville Laboratory S	ample Discrepancy Report	(SDR) SDR #: 0366212
Initiator: John Lach Date: 6/14/07 Client: Two	Batch: <u>0305レ3ン</u> 、 Samples: <u>舟ぃ</u> Method: <u>sw846/MCAVW/CLP/</u>	
b. General Discrepancy Missing Sample/Extract Co	cle)signature/date: fic results; attach data if necessary)	ther
2. Known or Probable Causes(s)		
3. Discussion and Proposed Action Re-log Entire Batch Following Samples: Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle) 4. Project Manager Instructionssigns Concur with Proposed Action Disagree with Proposed Action; S Include in Case Narrative Client Contacted: Date/Person Add Cancel	ature/date:	<u>a/18/07</u>)
5. Final Actionsignature/date:	10	
Route Distribution of Completed SDR X Initiator X Lab General Manager: M. T X Project Mgr: Stone/Johnson/ X Technical Mgr: Wesson/Dan X QA (file) Data Management: Feldmar Sample Prep: Beegle/Kiger	Meta faylor Inorg /Haslett GC/L iels Log-i	ion of Completed SDR s: Beegle anic: Perrone C: Kiger Rychlak/Layman n: Melnic n: Soos



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF GASOLINE RANGE ORGANICS DATA

- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

R:/SHARE/GCVOLATILE/GCVOLATILEGLOS.DOC

Report Date: 06/18/03 12:38

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1 RFW Batch Number: 0305L329 B16W82 B16W81 B16W82 B16W82 Cust ID: B16W79 B16W80 004 004 MS 004 MSD 002 003 RFW#: 001 Sample SOIL SOIL SOIL SOIL Information Matrix: SOIL SOIL 1.00 1.00 1.00 1.00 1.00 1.00 D.F.: UG/KG UG/KG UG/KG Units: UG/KG UG/KG UG/KG 79 % 74 % 81 ş. 82 Fluorobenzene 104 30 U 30 U 33 U 93 * Gasoline Range Organics (GRO) 33 U B16W90 TBLKIZ TBLKIZ BS Cust ID: B16W83 RFW#: 005 006 03LVJ515-MB1 03LVJ515-MB1 Sample SOIL SOIL Information Matrix: SOIL SOIL 1.00 1.00 1.00 D.F.: 1.00 UG/KG UG/KG Units: UG/KG UG/KG 78 S. 94 % 96 82 ջ Fluorobenzene 33 U 30 U 106 30 U Gasoline Range Organics (GRO)

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Mr. M.

(6) FOH WHE FILLS

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of _

Liquid

Solid

Liquid

Solid

Time

1510

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1030

1130

Collected | Collected

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Est. Final Proj. Sampling Date _____

Project Contact/Phone # _____

Date Rec'd _ 5 2 03 _

Lab

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Saf # F03006

MATRIX

CODES:

S - Soil

SE - Sediment SO - Solid

SL - Sludge W - Water

0 - 01 A - Air

DS - Drum Solids

DL - Drum Liquids

WI - Wipe X - Other

F - Fish

L - EP/TCLP Leachate

Lionville Laboratory Project Manager

QC SOC Del StO TAT

COLBROWT9

Special Instructions: Pun Matrix OC

Client Try Hanford Fo3-coxo

Project # 11343-1000-001-9999-00

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Volume

<u>30 dou</u>

Date Due (2103) ship

Client ID/Description

80

98

83

9O

91

Preservatives

ANALYSES

Matrix

DATE/REVISIONS:

Matrix

QC

Chosen

(v)

MS MSD

REQUESTED

Date

Refrigerator #

#/Type Container

of.					V	L	15			
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_		Lionv	ille Lat	orator	/ Use (Only				
Samples were: 1) Shipped or Hand Delivered Package or N Airbill # 2) Unbroken on Outer										
3)	Ambie Recei	ent or e	Good	3) Prese	nt on S	ample or N			
Condition (or N 4) Unbroken on 4) Samples Sample (or N Property Preserved COC Record Present Upon Sample Rec't										
51	Recei	vad Wi	thia			(v)				

Relinquished	Received	, -		i _
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FedEx	Wmilh	5.2-03	0945	
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	ple 2 001 00	<u> </u>		D. De D. Ld. Cr. Lu.								

HAVIE

5-14-03 1 Per Client: Due Date: 6-16-03

COC Record? Y or (N) NOTES:

7915 8463 3221

Holding Times

INOF

Metal

Lionville Laborator

(Y/or N

Cooler Temp. <u>1.3</u> ℃

FH-Central	l Plateau P	roject	C	HAIN OF CUST	ODY/S	AMPI	LE ANALY	YSIS	REQ	UEST	FO	3-006-62	Page 1	of 1
Collector Johansen/Pope/Pfis	ter		Comp LC	any Contact Hulstrom	Telepho: 373-3				Project TRENT	Coordinator , SJ	Price Code	8N	Data Tu	rnaround
Project Designation 200-PW-2/200-PW	'-4 OU - Borcho	e Soil Sampling		ling Location -A-37 (C4106); (12.5'-15	i)				SAF No F03-000		Air Quality	у 🗆	45	Days
Ice Chest No. EX	2c 96	056		Logbook No. F-N-3361		CQA 117504	ES10			l of Shipment ral Express	•			
Shipped To EDERLINE SERV	ICES (Fermerly	RECRA	(22/03 Offsit	e Property No. A	30	22	-0		Bill of	Lading/Air B	111 No. 5 EE	OSP		
POSSIBLE SAMPI				Prescrvation	Cool 4C	Cool 40	C Cool 4C	None		None				
Special Handling	and/or Store	T A		Type of Container	aG	aG	aG	a/G		aC				
Obecier transming	and or Dros ag			No. of Container(s)	l l		1	1		/,				
		•	•	Volume	120mL	60mL	. 120mL	60ml		60mL				
	SAMPLE ANALYSIS						3 - Oil & Gresse - 413.1	See item (Specia Instruction	4/1	tium - H3				
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Sample No.	·	Matrix *	Sample Date	Sample Time		1)								
B16W79		SOIL	4/7.8/03	1353	1 7	1 *	1 1/2	/					}	
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Relinquished By/Remover REF 1 A Relinquished By/Remover SJGALE SA	3728 5	Date/Time	Received By/Sto	51/10 51			29, Nickel-63, Nepi		<u> </u>	e ifir	-,- -	•	Touris	W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids
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LABORATORY SECTION	Received By		 		Tid	tle							Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	<u> </u>					Dispos	sed By]	Date/Time	

FH-Central Plateau Project		CI	IAIN OF CUST	ODY/S	AMPL	E ANAL	NALYSIS REQUEST F03-006-63 Page 1 o						
Collector Johansen/Pope/Pfister			nny Contact Hulstrom	Telepho 373-3				Project Coordin TRENT, SJ	tor	Price Code	8N	Data Tu	rnaround
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling		ing Location -A-37 (C4106); (17.5'-20)')				SAF No. F03-006	1	Air Quality	′ 🗆	45	Days
Ice Chest No. R C 9			Logbook No. F-N-3361		COA 117504E	S10		Method of Ships Federal Expres					
Shipped To EBERLINE SERVICES (For	RECKA menty TMA) - 48 - 41	22/02 Offsite	Property No.	403	02	20		Bill of Lading/A	ir Bill N	" 50E	- 0370		
POSSIBLE SAMPLE HAZA					0.440	0-140		/		1			1
{		ļ	Preservation	Cool 4C	Cool 4C	Cool 4C	Non	e None			<u> </u>		<u> </u>
 Special Handling and/or S	torage	i	Type of Container	åG	aG	aG	aG	ad					
Special Handling and O		;	No. of Container(s)	1	1	1	1	/¹					
			Volume	120mL	60mL	120mL	60m	L 60mL					
	SAMPLE ANALY	SIS		Chromium Hex - 7196	NO2/NO3 - 353,2	Oil & Gresse - 413.1	See item Speci Instruct	¥′ /} }					
Sample No.	Matrix *	Sample Date	Sample Time	Joseph Mr. 1 System 1		3000 0 0 0 0 0 0 0 0 0 0					And the second s		
B16W80	SOIL	4/28/03		*	K	X	/						
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Relinquished By/Removed From Date/Time Received By/Stored In Relinquished By/Removed From Date/Time Received By/Stored In SJGALE Date/Time 1100 Received By/Stored In SJGALE Date/Time Date/Time Received By/Stored In FED EX Relinquished By/Removed From Date/Time Received By/Stored In Relinquished By/Removed From Date/Time Received By/Stored In Relinquished By/Removed From Date/Time Received By/Stored In Relinquished By/Removed From Date/Time Received By/Stored In Received By/Stored				The state of the s						4; Todine-	S=Soil SE=Sodiment SO=Solid SI=Studge W = Water O=Oil A=Air DS=Drum Liquids T=T issue WI=Wipe L=Liquid V=Vegetation X=Other		
Relinquished By/Removed From Date/Time Received By/Stored In				ate/Time				11/03		<u>.</u>	<u> </u>		
LABORATORY Received By SECTION	1			Ti	tie						r	Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION						Dispo	sed By				1	Date/Time	

FH-Central P	lateau Project	CH	CHAIN OF CUSTODY/SAMPLE ANALYSIS						REQUEST F03-006			Page 1	of 1
Collector Johansen/Pope/Pfister			Company Contact Telephone No. LC Hulstrom 373-3928						ator	Price Code	8N	Data Tur	\sim
Project Designation 200-PW-2/200-PW-4	OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (27.5'-30')					SAF No. F03-006	Air Quality		45]	Days 🗎	
ice Chest No. ER C	-96056		Field Logbook No. COA HNF-N-3361 117504ES10					Method of Shipment Federal Express					
Shipped To EBERLINE SERVICE	RECRA ES (Formerly TMA) AGA	Offsite	Property No.	030	22	2		Bill of Lading//	Vir Bill N	°. 30E	037		
	HAZARDS/REMARKS	7 / -		}	ļ	1	}	ل ا]	}	
			Preservation	Cool 4C	Cool 4C	Cool 4C	Non				<u> </u>		
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			Volume	120mL	60mL	120mL	60m	L 60mL					
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci			T			
	SAMPLE ANAL	YSIS		}	1		Instruct	/** Jus			}		
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Sample No.	Matrix *	Sample Date	Sample Time										
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CHAIN OF POSS	SESSION	Sign/Print				CIAL INSTI		ONS 184	4/24		** The laborate	onvie to	Matrix *
Relinquished By/Removed F	Mars UNA 1116		ed in FRC Di Rochiber 4	12416314				sel range compounds			THE MADELLAN	ory is to	S=Soit SE=Sodiment
Relinquished By/Removed F	TOM Date/Time 14 00	Received By/Ston		ate/Time	1 Oct III			1 -09,90 Total Sr; 1	sotopic Tho	niwu (Thorium-	232); Carbon 1	4; Iodine-	SQ=Solid S1=Sludge
Rica D. +	- 116cm 4 C103		3728 4.26	F03	129:1	Nickel-63: Ner	otunium-2	37 ASK	4/22	/ 03			W ≃ Water O=Oil
Relinquished By/Removed F	rom Sate/Time	Received By/Store		5 103	1106				,				A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed F		Received By/Store	Ми	ate/Time	_								T=Tissuc WI=Wipe L=Liquid
Relinquished By/Removed F	edilo Di	ate/Time	/, rel	rsonnel not inquish sam	inles fro	m .b. 2720					V=Vegetation X=Other		
Relinquished By/Removed F		ite/Time	Re	ք# <u>/Թ</u> օո	i <u> </u>	1 /03							
LABORATORY Reco	ceived By			Tit	ile						D	Pate/Time	
FINAL SAMPLE Dis	sposal Method			·		Dispo	osed By					Date/Time	
													

FH-Central Platea	u Project	CI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-006-65 Page								Page 1	of 1	
Collector Company Contact Johansen/Pope/Pfister LC Hulstrom				Telephone No. 373-3928 Project Coordinator TRENT, SJ Price Code 8					8N	Data Turnaround			
Project Designation 200-PW-2/200-PW-4 OU - B		Sampling Location 216-A-37 (C4106); (37.5'-40')					SAF No. Air Qual				45 J 	Days	
Ice Chest No. ERC 9.6	056		Field Logbook No. COA HNF-N-3361 117504ES10					Method of Shipment Federal Express					
Shipped To EDERLINE SERVICES (For	LECRA 18	Offsite	Offsite Property No. A030 ZZO					Bill of Lading/Air Bill No. 588 057					
POSSIBLE SAMPLE HAZA	RDS/REMARKS ''	1		}	})	}				}		ļ
			Preservation	Cool 4C	Cool 40		No			_			
Special Handling and/or S	torage	.	Type of Container	a.G	aG 1	aG	a(<u> </u>		 -		
			No. of Container(s)	1			Ĺ'				<u> </u>		
			Volume	120mL	60mL	. 120mL	60n	nL 60mL					}
				Chromium Hex - 7196	NO2/NO 353.2		See item Spec Instruc	iai /					
	SAMPLE ANALY	/SIS		1	}		1	M			1		
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CHAIN OF POSSESSIC	N	Sign/Prin	Names	<u> </u>	Ist	PECIAL INST	RUCTI	ONS 98	<u> </u>	1/22/03		<u> </u>	Matrix *
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FH-Central Plates	CI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								-006-66	Page 1	of 1	
Collector Johansen/Pope/Pfister			nny Contact Hulstrom	Telepho 373-3	ne No. 928			Project Coordi TRENT, SJ	nator	Price Code 8N Data T			rnaround
Project Designation 200-PW-2/200-PW-4 OU - B		Sampling Location SAF No. 216-A-37 (C4106); (47.5'-50') F03-006						Air Quality		45]	Days ~		
Ice Chest No. ERC 9	Logbook No. F-N-3361						\$5						
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POSSIBLE SAMPLE HAZA	RDS/REMARKS	7-7-											
		!	Preservation	Cool 4C	Cool 4C	Cool 4C	Non						<u> </u>
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Special fraithing and/or S	itoi age		No. of Container(s)	1	1	1	i		}				
			Volume	120mL	60mL	120mL	60m	L 60mL					
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Sample No.	Matrix *	Sample Date	Sample Time		<u> </u>							<u></u>	
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Relinquished By/Removed From Date/Time Received By/Stored In D					Personnel not available to						T=Tissue Wi=Wipe L=Liquid V=VegCtation X=Other		
LABORATORY Received By SECTION	y	. 	 	T	ide	- 					D	ate/Time	
FINAL SAMPLE Disposal Medisposition	ethod					Dispo	sed By				ε	ate/Time	

FH-Central Plates	au Project	C	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-006-73								Page 1	of 1		
Collector Johansen/Pope/Pfister								Project Coordi TRENT, SJ	DATOF	Price Code	8N		rnaround	
Project Designation 200-PW-2/200-PW-4 OU - E	Borchole Soil Sampling		· · · · · · · · · · · · · · · · · · ·					SAF No. F03-006		Air Quality [45	45 Days	
Ice Chest No. ERC 9	6 056	Field HN	Field Logbook No. CO. HNF-N-3361 1175				DA Method of Shipment Federal Express							
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POSSIBLE SAMPLE HAZA		/		Γ	1	<u> </u>	Γ			1	T	Γ		
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			No. of Container(s)			ļ. <u>.</u>	<u> </u>				 	<u> </u>	<u> </u>	
			Volume	120mL	60mL	120mL	60m	L 60mL		-	1			
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REF 14 3728		SUGAL	10/2ch 51		00) 1 29;	Nickel 63; Neg	stunium-2	32 - JEgs	4/2	2/4)			W = Water O=Oil	
Relinquished By/Remoyed From	Date/Time ろ / ロコ ! 100	Received By/Sto	edak Da	ate/Time	}					4			A=Air DS=Drum Solids	
	Date/Time	Received By/S/p	eq in	nte/Time									DL=Drum Liquids T=Tissue WI=Wine	
Ged E 5.2.03 0915 De Min 5203								labla to					W1=Wipe L=Liquid V=Vegetation	
Relinquished By/Removed From Date/Time Received By/Stored In						relinquish,	resonnel not available to linquish samples from the 3728 ef # A on 5 / 4 / 03					X=Other		
Relinquished By/Removed From	Date/Time	Received By/Stor	ed in Da	te/Time	_	Ref# /	on_6	<u> </u>		•		_		
LABORATORY Received B	Зу		 	Ti	tle						I	Date/Time		
FINAL SAMPLE Disposal M DISPOSITION	Method					Dispo	sed By					Date/Time		

FH-Central Plates	u Project	C	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST							FU3-000-74			
Collector Johansen/Pope/Pfister		Comp	any Contact Hulstrom	Telepho 373-3	ne No.	TRENT, SI				Price Code	8N		Contionan
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')					SAF No. F03-006		Air Qualit	y 🗆	45 1	Days
Ice Chest No. ERC 9	HN	Logbook No. F-N-3361	COA 117504ES				ess						
Shipped To MOSICS (FCRA Offsite Property No. A					20			Bill of Lading	Air Bill	No.S&&	00,00	<u></u>	·
POSSIBLE SAMPLE HAZA	RDS/REMARKS		Preservation	Cool 4C	Cool 4C								
Special Handling and/or Storage Type of Container				aG 1	aG								
No. of Container(s) Volume					250mL						 		
SAMPLE ANALYSIS					Chloro- Herbicides - EPA8151								
Sample No.	Matrix *	Sample Date	Sample Time				47 E						
B16W91	SOIL	425/03	1130	X	X								
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CHAIN OF POSSESSIO)N	Sign/Prin	nt Names		SPEC	IAL INSTRU	JCTIC	NS				<u> </u>	Matrix *
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SECTION						Dispose	ed Bv					Date/Time	
FINAL SAMPLE Disposal N DISPOSITION	remog						,						

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

JENT: TNU Hamford

rchase Order/Project:

DATE: 5.2.03

1F# SOW# / Release #: FO 3-006

iboratory SDG #:

03051329

OTE:	ALL ENTRIES MARKED "NO" MUST BE F	EXPLAINED IN	THE COMM	ENT SECTION	·
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	, DNo ,	D N/A	☐ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	TV Yes	[] No	D N/A	□ see Comment #
3.	Airbill # recorded?	Yes	□ No	D N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	DYYes	· □ №	O N/A	🗅 see Comment #
5.	Sample containers are intact?	~Q.Yes	D No	D N/A	☐ see Comment #
6.	Custody seals on sample containers intact, signed and dated?	Yes .	D No.	D N/A	D see Comment #
7.	All samples on coc received?	D/Yes	D No	D N/A	see Comment #
8.	All sample label information matches coc?	19/Yes	□ No	□ N/A·	D see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	DYes	□ No	D NA	D see Comment #
10	. Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	by Yes	□ No	A/A	□ see Comment #
11	. Where applicable, bar code labels are affixed to coc?	D Yes	□ No	DONIA	See Comment #
12	. coc signed and dated?	Dyyes	D No	D N/A	D see Comment #
13	coc will be faxed or emailed to client?	E Yes	□ No	DNA	see Comment #
14	Project Manager/Client contacted concerning discrepancies? (name/date)	D Yes	, 🗅 No	WNA	D sec Comment #

Cooler # / temp (°C) and Comments:

ELC 96.056 / 1.3°

Laboratory Sample Custodian:

Laboratory Project Manager:

Diffrion

15

Lionville Laboratory, Inc. DRO ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
			*			
B16W79	001	S	03LE0577	04/28/03	05/14/03	05/16/03
B16W80	002	S	03LE0577	04/28/03	05/14/03	05/16/03
B16W81	003	s	03LE0577	04/29/03	05/14/03	05/16/03
B16W82	004	S	03LE0577	04/29/03	05/14/03	05/16/03
B16W82	004 MS	s	03LE0577	04/29/03	05/14/03	05/16/03
B16W82	004 MSD	S	03LE0577	04/29/03	05/14/03	05/16/03
B16W83	005	S	03LE0583	04/29/03	05/15/03	05/19/03
B16W90	006	S	03LE0577	04/28/03	05/14/03	05/16/03
LAB QC:			-			
					•	•
BLK	MB1	S	03LE0577	N/A	05/14/03	05/19/03
BLK	MB1 BS	s	03LE0577	N/A	05/14/03	05/19/03
BLK	MB1	S	03LE0583	N/A	05/15/03	05/20/03
BLK	MB1 BS	S	03LE0583	N/A	05/15/03	05/20/03



Anulis/2



Analytical Report

Client: TNU-HANFORD F03-006

LVL#: 0305L329

SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00

Date Received: 05-02-2003

DIESEL RANGE ORGANICS

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were extracted on 05-14,15-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures on 05-16,19,20-2003. The extraction procedure was based on method 3540 and the extracts were analyzed based on method 8015B. The analysis met the intent of method WTPH-D.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. Samples were extracted outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 3. The method blanks were below the reporting limits for all target compounds.
- 4. All surrogate recoveries were within acceptance criteria.
- 5. The blank spike recoveries were within acceptance criteria.
- 6. The matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

som\r:\group\data\dro\tnu hanford\0305-329.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 5 pages.

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 0-30-1414. Batch: 03056725. DORU Initiator: John Lack. Parameter: Samples: An Matrix: Date: 6/19/0 co-1 Method: sw846/McAWW/CLP/ Prep Batch: 03 LE 5 77, 583 Client: TW 1. Reason for SDR __ Sampler Error on C-O-C a. COC Discrepancy ___ Tech Profile Error Tech Profile Error ___ Client Request Transcription Error ___ Wrong Test Code __ Other ____ b. General Discrepancy __ Missing Sample/Extract Container BrokenInsufficient SampleNot Amenable to Analysis __ Wrong Sample Pulled __ Label ID's Illegible __ Preservation Wrong __ Received Past Hold Hold Time Exceeded Improper Bottle Type Note : Verified by [Log-In] or [Prep Group] (circle)...signature/date: ___ c. Problem (Include all relevant specific results; attach data if necessary) SAMPLES WERE EXPRESTED 2Days DIG Hold. 2. Known or Probable Causes(s) 3. Discussion and Proposed Action Other Description: __ Re-log Entire Batch Next H. Following Samples: _____ Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle) 4. Project Manager Instructions...signature/date ✓ Concur with Proposed Action ___ Disagree with Proposed Action; See Instruction Include in Case Narrative Client Contacted: Date/Person Add Cancel 5. Final Action...signature/date: __(L/// Verified re-[log][leach][extract][digest][analysis] (circle) Hard Copy COC Revised **Electronic COC Revised** EDD Corrections Completed When Final Action has been recorded, forward original to QA Specialist for distribution and filing. Route Distribution of Completed SDR Route Distribution of Completed SDR X Initiator __ Metals: Beegle __ Inorganic: Perrone X Lab General Manager: M. Taylor GC/LC: Kiger X Project Mgr. Stone/Johnson/Haslett __ MS: Rychlak/Layman X Technical Mgr: Wesson/Daniels __ Log-in: Melnic X QA (file) __ Admin: Soos __ Other: ____ Data Management: Feldman Sample Prep: Beegle/Kiger

QA-105-A-0801

0366211



GLOSSARY OF DIESEL RANGE ORGANICS DATA

DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



GLOSSARY OF DIESEL RANGE ORGANICS DATA

- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC/MS.

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1 RFW Batch Number: 0305L329 B16W82 B16W82 B16W82 B16W81 B16W80 Cust ID: B16W79 004 MSD 004 MS 004 001 002 003 RFW#: Sample SOIL SOIL SOIL SOIL SOIL SOIL Information Matrix: 1.00 1.00 1.00 1.00 1.00 D.F.: 1.00 mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mq/Kg Units: 101 97 % 93 % 94 % 87 % 69 % p-Terphenyl 72 % 12.5 U 12.7 U 12.5 U 12.8 U Diesel Range Organics 12.7 U 12.7 U 12.7 U 12.5 U 12.5 U 12.8 U Kerosene BLK BLK BS BLK BS B16W90 BLK Cust ID: B16W83 03LE0577-MB1 03LE0577-MB1 03LE0583-MB1 03LE0583-MB1 005 006 RFW#: Sample SOIL SOIL SOIL SOIL SOIL Matrix: SOIL Information 1.00 1.00 1.00 1.00 1.00 D.F.: 1.00 mq/Kq mg/Kg mg/Kg mg/Kg Units: mg/Kg mg/Kg 109 % 104 % 106 % 91 % 108 % p-Terphenyl 74 12.0 U 74 % 12.0 U 12.5 U 12.7 U Diesel Range Organics 12.0 U 12.0 U 12.0 U 12.5 U 12.0 U 12.7 U Kerosene

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC



Report Date: 05/24/03 11:27

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page ___ of ___

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0305L	-529

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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SL - Sludge W - Water	} -	 				MS	MSD	5	+			-		0	0							1	-1.		- ;	
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DL - Drum Liquids L - EP/TCLP CCH 82							{ -	++		<u> 5005 P</u>	_	 	 	 										 	\rightarrow	$\vdash\vdash\vdash$
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Special Instruc	tions:	KLN	Mah	rix G	C		S-	14-03	1	Pur	clast:	70.	<u>. Da</u>	<u> </u>	6-16	- 03			-			He Lab		Use Or		
Saf #	Foz	5000	0								-00%						. cd.	Cr. Cu	1)	amples Shippe and Del	ed 🗸	or	1)	mper Resi Present	t on Ou	uter
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FH-Centra	ıl Plateau Project	ODY/S	AMPL]	E ANAL'	YSIS	REQUEST	1	F03-006-62	Page 1	of 1		
Collector Johansen/Pope/Pfi	ster		ny Contact Hulstrom	Telephor 373-39				Project Coordina TRENT, SJ	Price Code	= 8N		naround
Project Designation 200-PW-2/200-PV	V-4 OU - Borehole Soil Samplin	Sampl 216	ing Location -A-37 (C4106); (12.5'-15	i)				SAF No. F03-006	Air Qual	ity 🗀	45 1	Days ~
Ice Chest No. EX	2 = 96 056		Logbook No. F-N-3361		COA 117504E	S10		Method of Shipm Federal Express				
Shipped To EBERLINE SERV	NECK!		Property No. A	030	22	0		Bill of Lading/A	ir Bill No. S E	E OSPO		
	LE HAZARDS/REMARKS					7		1				
			Preservation	Cool 4C	Cool 4C	Cool 4C	Nos				<u> </u>	
Special Handling	g and/or Storage		Type of Container	aG	aG .	∎G	a/C					
			No. of Container(s)	1	1	1	1	1/				
			Volume	120mL	60mL	120mL	60m	i 60mi		_ ['		
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grosse - 413.1	See item Speci Instruct	<u> </u>				
	SAMPLE AN	ALYSIS				1	, M					
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Sample No	o. Matrix *	Sample Date	Sample Time		gerig in Association also second in the							
B16W79	SOIL	4/2.8/03	1358	7	+	7						
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CHAIN OF P	OSSESSION	Sign/Prin			SPE	CIAL INSTR	UCTIO	, . ,	122/03			Matrix *
Relinquished By/Remov	- 1/ 1/-	Received By/Stor	ed In Da 3728 42803	ite/Time 1645					<u>50.0 pCi/g for Carbon</u> om WTPH-D analysis.		ory is to	S=Soil SE=Sediment
Relinquished By/Remov	Date/Time	Dagging Bu/Sag		te/Time		Technetium 90	Strontiun	n-89.90 Total Sr: Iso	otopic Thorium (Thoriu	im-2321: Carbon 1	1: ladi ne-	SO=Solid SI=Sludge
REF IA	3728 5103 1	SJGHU	51/1/2/_5/	03 11		Nickel-63, Nep					•	W = Water O=Oil
Relinquished By/Remov	ed From Date/Time	00 FED	edja Da	te/Time				,, ,				A=Air DS=Drum Solids DL=Drum Liquids
Religiouslyed By/Remov		Received By Stor	ad In Da	te/Time 2.03 0	9./	-						T=Tiesue WI=Wipe L=Liquid
Relinquished By/Remov	D . (T'	Received By/Stop	ed in Da	te/Time		ersonnel not	availab	le to om the 3728_				V=Vegetation X=Other
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time						cinquisit san Ref #01	n_ <u>S</u> _	om the 3728 //03				
LABORATORY SECTION	Received By			Tit	le				·_ · · · · · · · · · · · · · · · · · ·	D	ate/Time	
FINAL SAMPLE DISPOSITION	Disposal Method				 	Dispo	sed By				Pate/Time	
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FH-Central Plateau Project	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-006-63 Page 1											
Collector Johansen/Pope/Pfister	Compai LC H	ny Contact ulstrom	Telephor				Project Coordi TRENT, SJ	nator	Price Code	8N	Data Tu	rnaround
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		ng Location A-37 (C4106); (17.5'-20	מי)	· · · · · · · · · · · · · · · · · · ·			SAF No. F03-006		Air Qualit	у 🗆	45]	Days
Ice Chest No. 2R C 96 056		ogbook No. -N-3361		COA 117504ES	10		Method of Ship Federal Expre	:SS				
Shipped To RECEA EBERLINE SERVICES (Formerly TMA) AF 4/22/63	Offsite	Property No.	403	022	0	·	Bill of Lading	Air Bill	No. 30€	- 0370		,
POSSIBLE SAMPLE HAZARDS/REMARKS		Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	ne Nome					<u> </u>
Special Handling and/or Storage	ŀ	Type of Container	aG	æG	a G	aG	24					
Special Halloting and of Storage		No. of Container(s)	1	l	1	1	1/1					
		Volume	120mL	60mL	Oml 120mL		il 60mL					
SAMPLE ANALYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci festruct	ai /∖						
Sample No. Matrix * Sam	ple Date	Date Sample Time										
<u></u>	28/03	1510	*	X	X							
								 		 		
				ļ		 		 		- 		 -
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	Sign/Print	Names			IAL INSTR			18			! .	Matrix *
Relinquished By/Removed From Date/Time Received From D	ate/Time 16 45 ate/Time 03 110 ate/Time ate/Time d.3 09 ate/Time	(4)_1 (2)_1 (2)_1 (3)_1 (4)_1	echaetium 99; Nickel-63; Ner Personnel no elinquish sa	s and dies Strontium stunium-2 at availa mples f	— 48°	from WT lastopic T	PH-D analysis.	-232}; Carbon-1		S-Soil SE-Sedissent SO-Solid SI-Shadge W = Water O-Oil A-Air DS-Drum Solids DL-Drum Liquids Tuffssus Wi-Wige L-Liquid V=Vegetation X=Other		
LABORATORY Received By SECTION			11									
FINAL SAMPLE Disposal Method DISPOSITION					Dispo	sed By					Date/Time	

FH-Central Plateau Project CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-006-64 Page 1 of 1										of 1		
Collector Johansen/Pope/Pfister		ny Contact ulstrom	Telepho 373-3				Project Coordin TRENT, SJ	ator	Price Code	8N	Data Tur	\sim
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		ng Location A-37 (C4106); (27.5'-30	າ				SAF No. F03-006	/	Air Quality		45 1	Days ~
Ice Chest No. ER C 96 0 56		ogbook No. -N-3361	}	COA 117504E	S10		Method of Ships Federal Expres	s				<u>·</u>
Shipped To EBERI INE SERVICES (Formedy TMA) Agra 4/21.	Offsite	Property No.	030	22	0		Bill of Lading/A	Lir Bill N	10. 30E	057		
POSSIBLE SAMPLE HAZARDS/REMARKS			ł	}	1	ł	1 1	/	1			
		Preservation	Cool 4C	Cool 4C	Cool 4C	Nor						
Special Handling and/or Storage		Type of Container	aG	aG	aG	aG						
		No. of Container(s)	'	<u> </u>	1	1						
	j	Volume	120mL	60mL	120mL	60ss	ıL 60mL					
			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci	iài/					
SAMPLE ANALYSIS						Instruct	7 1 43					
					l Ry	70,			TILTO			
Sample No. Matrix * S	Sample Date	Sample Time										
B16W81 SOIL 4	29/03	0 745	X	*	1	<u>/</u>				BILLING	516	SCF)
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CHAIN OF POSSESSION	Sign/Print	Names	l	SPE	CIAL INSTI	RUCTIO	ONS 182	4/22	10}	.L	! _	Matrix *
Prelinquished By/Removed From Date/Time Re	ceived By/Store	din FRC Da	541631	•••	he laboratory is	s to actile	ve a detection that of set range compounds t	SOID DCD	g for Carbon-14:	** The laborate	ory is to	S=Soil SE=Sodiment
	California Printer	R-Ghlber 4			Technolium 99	Suoniiu	n , 89,90 Total Sr; Is	otopic The	origin (Therium-	Z2; Carbon-l	4; lodine	SO=Solid St=Studge
Renguished By Kemoved From Read 4 CA 63	1B		- 03		Nickel-61: Ner					••	•	W = Water O=Oil
Relinquished By/Removed From Pate/Time Re	eccived By/Store	^{чш} . / . /	te/Time 5 103	1106			, ,		•			A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From Date/Time R	eceived By/Store		ite/Time									T=Tissue WI=Wipe
SIGALTYSCH 5103 1100	FCD (eccived By/Store		ite/Time	 -	ersonnel not	availah	le to					L=Liquid V=Vegenation X=Other
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Relinquished By/Removed From Date/Time Re	ite/Time	_	п <u>(БЭ</u> 0)	ــــ <u>د</u> ــا	/_L/ 03							
LABORATORY Received By SECTION	· · · · · · · · · · · · · · · · · · ·		Ti	tle						D	ate/Time	
FINAL SAMPLE Disposal Method DISPOSITION					Dispo	osed By				Ī	Date/Time	

FH-Central Plateau Project	CI	HAIN OF CUST	ODY/S	AMPL	E ANAL!	YSIS	REC	QUEST		F0	3-006-65	Page 1	of 1
Collector Johansen/Pope/Pfister		ny Contact Hulstrom	Telepho 373-3				Proje TREN	ct Coordin T, SJ	ator	Price Code	8N	Data Tur	<u> </u>
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		ing Location -A-37 (C4106); (37.5'-40)')				SAF 1 F03-0			Air Quality	′ 🗆	45 1	Days
ice Chest No. ERC 9.6 055		Logbook No. F-N-3361	`	COA 117504E	S10		Fee	od of Ship leral Expre	SS		·		
Shipped To RECRA 184- EBERLINE SERVICES (Formerly TMA) 4/14/41	Offsite	Property No.	030	72	0		Biil o	of Lading//	Air Bill N	10. S&&	OSPC		
POSSIBLE SAMPLE HAZARDS/REMARKS					T	-		Λ	ſ	Ì	}		}
		Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	ne	None					
Special Handling and/or Storage	•	Type of Container	a G	aG	a.G	a(*7	·				
		No. of Container(s)	1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1 100 1	1		\int_{0}^{1}	<u> </u>				
	_	Volume	120mL	60mL,	120mL	60n	LT /	60mL					
			Chromium Hex - 7196	NO2/NO3 353.2	Oil & Grease - 413.1	See item Spec	/ آمدن	Tritium - H3	-				
SAMPLE ANALYSIS		·	1		1	instruc		`					
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Sample No. Matrix * Sa	mple Date	Sample Time										V. 30	
B16W82 SOIL 4	129/0	3 0900	X	1	1	V_{-}					BILLING	8 (W	SCF)
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CHAIN OF POSSESSION	Sign/Prin	t Names	l	SPI	CIAL INSTI	LRUCTION	ONS	18	- 4	122/03		L	Matrix *
Retinanished Bu/Remeyed From Date/Time Rec	cived By/Sto	red in Eec p	ete/Time	I CP	The laboratory is ort both kerosene	s to achie	ve a der sei range	compounds	f 30.0 pCi from WTF	g for Garbon 14 H-D analysis.	++ The laborate	ory is to	S=Soil SE=Segiment
	-f= 100	- R - F- 164-4	ate/Time		-Technehum-99:	Strontin	m-89.90	- Lotal Sr. 1	sotopic Ta	orium (Thorium	-232) ; Carbon 1	4; Iodine-	SO=Solid SI=Shalge
Relinquished By/Removed From Date/Title 400 Rec	ΪΒ	3728	+. 29.	125	Nickel-63; Ne		237	181	4/	12/03			W = Water Q=Oil
Relinquished By/Keinoved From Daw Time Rec	eived By/Sto	red in D	ate/Time					•	•	•			A=Air DS=Drum Solids
	JEALE	V//W~~~	0 3 1	100									DL=Drum Liquids T=Tisms WI=Wips
Relinquished By/Removed From Date/Time Rec 5 16 ALE MOSC 5 103 100 =	Sived By/Sid	510	- FED	EX	Personnel no	t availa	ble to						L=Liquid V=Vegetation
Relinhuished By/Removed From Date/Time Rec	cived By Sto	red In D	ate/Time		relinquish sar Ref# <i>1B</i> _o	mples f	ion the	3728					X=Other
Relinquished By/Removed From Date/Time Rec	cived By/Su		ate/Time	7.13		<u> </u>	_/ <u></u>						
LARORATORY Received By				itle							E	ate/Time	L
LABORATORY SECTION Received By													 _
FINAL SAMPLE Disposal Method DISPOSITION					Dispo	osed By						Date/Time	

FH-Central Plate	eau Project	CI	HAIN OF CUST	ODY/S	AMPLI	E ANAL	YSIS	REQUI	EST	F03-006-66 Page			of 1
Collector Johansen/Pope/Pfister			nny Contact Hulstrom	Telepho 373-3				Project Co TRENT, S.		Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU -	Borehole Soil Sampling		ing Location -A-37 (C4106); (47.5'-50	")				SAF No. F03-006		Air Quality		45	Days
Ice Chest No. ERC	96 056		Logbook No. F-N-3361		COA 117504ES	310		Method of Federal	xpress		·		
Shipped To EBERLINE SERVICES (F	CECRA OFFICE OFFI	Offsite	Property No.	30	220			Bill of La	ling/Air Bil	No. SEE	0500		
EBERLINE SERVICES (F POSSIBLE SAMPLE HAZ	ARDS/REMARKS	// -/				Ţ	T						
		!	Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	e Nor	·/		·		
Special Handling and/or	Storage		Type of Container	aG	åG	åG	aG	/	/		 	<u></u>	
	-	ĺ	No. of Container(s)	11	1	1	<u>'</u>	-1/			<u> </u>		
		ĺ	Volume	120mL	60mL	120mL	60m	L 60m	L	.			
			<u> </u>	Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci		- нз				
	SAMPLE ANALY	'SIS			ļ		[asyruct	روم المراجع	1			1	[
							N.	(M)		17078			
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Sample No.	Matrix *	Sample Date	Sample Time		*	+	1/			BIGUX	9 (1)	S(F)	المحمدة عبد مراحات الم
B16W83	SOIL	4/01/02	1000	\ <u>'</u> -	+->-	 	 			<u> </u>	LU		
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<u> </u>	 				 	 							
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CHAIN OF POSSESSI	ION	Sign/Prin			SPE	CIAL INSTI	RUCTIO	ONS	1894	U/LL/83	44 Th . Ish	/	Matrix *
Relinquighed By/Remdyrd From	YITTO Date Time 1/2 14	Received By/Stor	L L	15/1/1/21	repo	n both kerosen	e and dies	ej taulie comb Ac a quiestion	ounds from W	TPH-D analysis.	** The laborat	ory is to	S=Soil SE=Sodianent
Relinquished By/Removed From	Date/Time 1 100	Received By/Sto	red In Da	te/Time						Thorium {Thorium-2	32); Carbon-I	4; lodine-	SO=Solid SI=Sludge W = Water
	16 4.2903 Dele/Time	Received By/Stor		19 - 4	23 128	Nickel-63: Ne	ompiom-2	.3/	gar	4/22/03			O-Oil
Retinquished By/Ramoved From		SJ GALL			100								DS-Drum Solida DL-Drum Liquids T-Tissue
Relinquished By/Removed From	Date/Time 5 1 0 3 1 1 0 0	Received By/Stor	red in Di	nte/Time		P.	reonina!						W =Wipe L=Liquid V=Vegazzion
Relinquished By/Removed From	Date/Time 5 - 3 - 03 0945	Received By/Stor		nte/Time 1-03_05	4)	re! Re	inquish f#//	not availab samples fro	le to m the 3728				X=Other
Relinquished By/Removed From Date/Time Received By/Stored in							<u>ب </u>		103	<u> </u>			{
LABORATORY Received SECTION	Ву			Ti	itle		<u>-</u>				Ē	Date/Time	
FINAL SAMPLE Disposal DISPOSITION	Method					Dispo	osed By				I	Date/Time	

FH-Central Platea	u Project	CI	HAIN OF CUST	ODY/S	AMPL	E ANAL	YSIS	REQUEST	F0	3-006-73	Page 1	of 1
Collector Johansen/Pope/Pfister			nny Contact Hulstrom	Telepho 373-3				Project Coordinator TRENT, SJ	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling		ing Location -A-37 (C4106); (17.5'-20	")				SAF No. F03-006	Air Quality	/ · 🗆	45	Days 🔨
Ice Chest No. ERC 9	6 05C		Logbook No. F-N-3361		COA 117504E	S10		Method of Shipment Federal Express				
Shipped To REC.		Offsite	Property No.	30	220			Bill of Lading/Air Bi	II No. 5 €€ 0	ے م دا		
POSSIBLE SAMPLE HAZA			Preservation	Cool 4C	Cool 4C	Cool 4C	Nos	ne None			 	
Special Handling and/or S	taraga		Type of Container	аG	аG	aG·	aC	20				
Special Handling and/of 5	tor age		No. of Container(s)	1	1	1	1	/'				
			Volume	120mL	60mL	120mL	60n	L 60mL				
	·	Chromium Hex - 7196	NO2/NO3 353,2	Oil & Gresse - 413.1	See item Spec Instruct	iai /						
Sample No.	Matrix *	Sample Date	Sample Time									
B16W90	316W90 SOIL 4/28/03 15 CO						 			 		
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Retinquished By/Removed From Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In Date/Time Received By/Stored In					5 rep	Technotium 99;	s to achie e and dies Stromius phunjum-2	ve a detection limit of 30.0 p el range compounds from W n-89,90 — Total Sr; Isotopic 37 — JGL U	TPH-D analysis. Thorium (Thorium-	232 }, Carb er I.		Matrix * S-Soil SE-Sediment SO-Solid SN-Shutge W - Water O-Oil A=Air DS-Drunt Solids DL-Drunt Liquids T-Tiesse Wl-Wipe L-Liquid V=Vegetation X-Other
FINAL SAMPLE Disposal Me DISPOSITION				Dispo	osed By		<u>-</u>	ī	Date/Time			

Collector Collector Company Contact Telephone No. Project Coordinator Project Coordinator Project Coordinator Project Coordinator Project Coordinator Project Coordinator Project Designation 200-PW-2700-PW-4 OU - Borchole Soil Sampling Sampling Location 216-A37 (Callofs) (0.55) SAF No. F03-006 Project Designation Pr		1	-000-74	FUS		EQUEST	IS RE	ANALY	AMPLE	ODY/S	IAIN OF CUST	 					
216-A-37 (C4106); (0.5)			8N	ice Code	Pi	oject Coordinat ENT, SJ	Pro TRI										
Shipped To	Days	45 1		r Quality	Ai								ampling	orehole Soil Samplin	Project Designation 200-PW-2/200-PW-4 OU - Bo		
Preservation Special Handling and/or Storage Type of Container No. of Container(s) Volume SAMPLE ANALYSIS Sample No. Matrix Sample Date Sample Time B16W91 SOIL VI 25 02 VI 30 Some Container Cool 4C I I I I I I I I I I I I I					SS	ederal Express	} F	0					6	6 056	Ice Chest No. ERC 9		
Preservation Special Handling and/or Storage Type of Container No. of Container(s) Volume SAMPLE ANALYSIS Sample No. Matrix Sample Date Sample Time B16W91 SOIL VI 25 02 VI 30 Some Container Cool 4C I I I I I I I I I I I I I		, 	05/20	S&&	Air Bil) No.	of Lading/Air	Bil		20	30 Z	Property No. AO	Offsite P	TECRA		Shipped To AND SERVICES (For		
Preservation A	1	•		}									RKS	RDS/REMARKS	POSSIBLE SAMPLE HAZA		
Special Handling and/or Storage Type of Container(s) No. of Container(s) Volume Perioder- Bost Sample No. Matrix * Sample Date Sample Time B16W91 SOIL 4/26/03 1/30 X	<u> </u>				<u> </u>						Preservation						
No. of Container(s)					·———				aG .		Type of Container			Storage	Special Handling and/or S		
Sample No. Matrix Sample Date Sample Time B16W91 SOIL 4 7 6 03 1 3 0 1	ļ	<u> </u>									No. of Container(s)			. •			
Sample No. Matrix * Sample Date Sample Time B16W91 SOIL 4 2 6 2 130 X X								}	250mL	60mL	Volume						
B16W91 SOIL 4 2 4 03 1 3 0 X X III III III III III III III III I									Herbicides -								
			Sample No. Matrix * Sample Date Sample Time									Sample No.					
CHAIN OF POSSESSION Sign/Print Names SPECIAL INSTRUCTIONS Mat									X	X	1130	28 03	41	SOIL	B16W91		
CHAIN OF POSSESSION Sign/Print Names SPECIAL INSTRUCTIONS Mat						 -				 				<u> </u>			
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SECTION FINAL SAMPLE Disposal Method Disposal		Date/Time	 -			 	Ву	Dispose							SECTION FINAL SAMPLE Disposal M		

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

LIENT: TNU Hanford

rchase Order/Project:

DATE: 5-2-03

AF#Y SOW#/Release #: FO3-006

aboratory SDG #:

03051329

TE:	ALL ENTRIES MARKED "NO" MUST BE I	EXPLAINED IN	THE COMM	ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	, DNo ,	□ N/A	D see Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes	□ No	DNA	☐ see Comment #
3.	Airbill # recorded?	Yes :	D No	D N/A	□ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	DXYes	□ No	A/A	□ see Comment #
5.	Sample containers are intact?	7974	□ No	D N/A	☐ see Comment
6.	Custody seals on sample containers intact, signed and dated?	TY'es	D No	O N/A	☐ see Comment
7.	All samples on coc received?	D Yes	D No	D N/A	· D see Comment
8.	All sample label information matches coc?	D/Yes	□ No	□ N/A·	☐ see Comment
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	DWA	D see Comment
10	. Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	yes Yes	□ No	□ N/A	🗀 see Commen
11	. Where applicable, bar code labels are affixed to coc?	D Yes	□ No	DONIA	See Commen
12	. coc signed and dated?	DY es	□ No	□ N/A	See Commen
13	. coc will be faxed or emailed to client?	D Yes	DNo	D N/A	🖸 see Commer
14	Project Manager/Client contacted concerning discrepancies? (name/date)	° □ Yes	D No	ENIA	🗅 see Comme
	•				

Cooler # / temp (°C) and Comments:

Elc 96.056 / 1.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dynuan

15

Lionville Laboratory, Inc. GCSC ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID	TAT #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79	001	 s	03LE0578	04/28/03	05/14/03	05/14/03
B16W80	002	S	03LE0578	04/28/03	05/14/03	05/15/03
B16W80	002 MS	S	03LE0578	04/28/03	05/14/03	05/15/03
B16W80	002 MSD	S	03LE0578	04/28/03	05/14/03	05/15/03
B16W81	003	s	03LE0578	04/29/03	05/14/03	05/15/03
B16W82	004	s	03LE0578	04/29/03	05/14/03	05/15/03
B16W83	005	s	03LE0578	04/29/03	05/14/03	05/15/03
B16W90	006	S	03LE0578	04/28/03	05/14/03	05/15/03
LAB QC:						
						
BLK	MB1	s	03LE0578	N/A	05/14/03	05/14/03
BLK	MB1 BS	S	03LE0578	N/A	05/14/03	05/14/03



Shaling



Analytical Report

Client: TNU-HANFORD F03-006

LVL#: 0305L329

SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00 Date Received: 05-02-2003

GC SCAN

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were prepared according to method 3580A (waste dilution-1g into 5mL) on 06-14-2003 and analyzed on 06-14,15-2003 according to Lionville Laboratory OPs based on SW846, 3rd Edition procedures based on method 8015B for Methanol, Ethyl Ether and 1-Butanol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. Samples were prepared outside of holding time; however, samples were analyzed within required holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 3. The method blank was below the reporting limits for all target compounds.
- 4. Surrogates are not currently employed in the methodology.
- 5. All blank spike recoveries were within acceptance criteria.
- 6. All matrix spike recoveries were within acceptance criteria.
- 7. All initial calibrations associated with this data set were within acceptance criteria.
- 8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iairi Daniels/

Laboratory Manager

Lionville Laboratory Incorporated

r:\group\data\gcsc\tunu\0305w329x.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1.5 pages.

Lionville Laboratory	Sample Discrepancy	/ Report (SDR)	SDR#	t: 036c	-147
Initiator: John Lach. Date: 6/4/07 Client: TW	Batch: <u>0305-324</u> Samples: <u>1,2-4</u> Method: <u>sw846/MCAWW/</u>	Matrix	<u></u>	ויט	
1. Reason for SDR a. COC Discrepancy Tech Pro Transcrip b. General Discrepancy Missing Sample/Extract Hold Time Exceeded Improper Bottle Type Note*: Verified by [Log-In] or [Prep Group] (c. Problem (Include all relevant specified SAMP)	Container Broken Insufficient Sample Not Amenable to Analysis drde)signature/date:	Wrong Sample Pulled Preservation Wrong	Lal	bel ID's li	-
2. Known or Probable Causes(s)				•	
3. Discussion and Proposed Actio Re-log Entire Batch Following Samples: Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle) 4. Project Manager Instructionss V Concur with Proposed Action Disagree with Proposed Action Include in Case Narrative Client Contacted: Date/Person Add Cancel	ignature/date: Fluth	n: - 6/16/13			
5. Final Actionsignature/date: Verified re-[log][leach][extract][descripted in Case Narrative Hard Copy COC Revised Electronic COC Revised EDD Corrections Completed When Final Action has been record		Other Explanation: Specialist for distribution	on and filin	ıg. İ	
Route Distribution of Completed SI X Initiator X Lab General Manager: M X Project Mgr: Stone/Johns X Technical Mgr: Wesson/D X QA (file) Data Management: Feldn Sample Prep: Beegle/Kig	i. Taylor on/Haslett paniels	nte Distribution of Comp Metals: Beegle Inorganic: Perror GC/LC: Kiger MS: Rychlak/Lay Log-in: Melnic Admin: Soos Other:	man		

QA-105-A-0801



DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



- P = This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC SCAN.

Lionville Laboratory, Inc.

GC SCAN

Report Date: 06/15/03 12:52 0 Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1 PEW Batch Number: 03051329

	Cust ID:	B16W79	B16W80	B16W80	B16W8	0	B16W81		B16W82	
Sample	RFW#:	001	002	002 MS	002 MS		003		004	
Information	Matrix:	SOIL	SOIL	SOIL			SOIL	-	SOIL	^
		1.00		1.00			1.00		1.00	
	Units:	mg/kg	mg/kg	mg/kg	mg/	kg	mg/k	g	mg/kg	9
		======f1==	=======fl	======================================	1=======	==fl==		=fl==		=f]
Methanol		28 U	25 U					U		
Ethyl Ether		28 U	25 Ü	105 %	92	ક	23	U	23	Ų
					_	_			0.7	
1-Butanol		28 U	25 บ	94 %	94	*	23	U	23	U
1-Butanol		28 Ü	25 บ	94 %	94	*	23	υ	23	U
1-Butanol	Cust ID:	28 U B16W83	25 U B16W90	94 % BLK	94 BLK BS					
1-Butanol					BLK BS	<u> </u>		U	23	
1-Butanol	Cust ID:	B16W83	B16W90	BLK	BLK BS	MB1		· · · · · · · · · · · · · · · · · · ·		
1-ButanolSample Information	Cust ID:	B16W83	B16W90 006 SOIL	BLK 03LE0578-MB1	BLK BS 031E0578- SOII	MB1		<u> </u>		
1-ButanolSample	Cust ID: RFW#: Matrix:	B16W83 005 SOIL	B16W90 006 SOIL	BLK 03LE0578-MB1 SOIL	BLK BS 03LE0578- SOII 1.	MB1 00		<u> </u>		
1-Butanol	Cust ID: RFW#: Matrix: D.F.:	816W83 005 SOIL 1.00 mg/kg	B16W90 006 SOIL 1.00 mg/kg	BLK 03LE0578-MB1 SOIL 1.00 mg/kg	BLK BS 03LE0578- SOII 1. mg/	MB1 00 'kg				
Sample Information	Cust ID: RFW#: Matrix: D.F.: Units:	816W83 005 SOIL 1.00 mg/kg	B16W90 006 SOIL 1.00 mg/kg	BLK 03LE0578-MB1 SOIL 1.00 mg/kg	BLK BS 03LE0578- SOII 1. mg/	MB1 00 kg ===fl==				
Sample Information	Cust ID: RFW#: Matrix: D.F.: Units:	B16W83 005 SOIL 1.00 mg/kg	B16W90 006 SOIL 1.00 mg/kg	BLK 03LE0578-MB1 SOIL 1.00 mg/kg	BLK BS 03LE0578- SOII 1. mg/	MB1 00 kg ===fl==				

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

W FOH ONH PIPED FIRM HUTERS DIEM . --

Lionville Laboratory Use Only

Custody Transfer Record/Lab Work Request Page 1 of 1

VLL

Q305L329

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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FH-Central Plateau Project	CHAIN	OF CUST	ODY/S	AMPLE	ANAL	YSIS	REQUEST		F03-006-62	Page 1	of i
Collector Johansen/Pope/Pfister	Company Con LC Hulstrom		Telephon 373-39				Project Coordina TRENT, SJ	ator Price	Code 8N		Daround
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling	Sampling Loca 216-A-37 (C	eation C4106); (12.5'-15)				SAF No. F03-006	Air C	Quality 🗌	45 J	Days
Ice Chest No. ERC 96 05F	Field Logbook HNF-N-336			COA 117504ES1	0		Method of Shipm Federal Express				
Shipped To RECRIA BERLINE SERVICES (Formerly TMA) 182 4(22/03	Offsite Proper	rty No. AC	30	220	<u> </u>		Bill of Lading/A	ir Bill No. 5	EE OSP		
POSSIBLE SAMPLE HAZARDS/REMARKS			1					}]
	Pr	reservation	Cool 4C	Cool 4C	Cool 4C	Non	e None		1]
Special Handling and/or Storage	Туре	of Container	aG	aG .	a-G	aG	a0				
Special Francising and St. Storage	No. of	f Container(s)	l	1	1	1	<u></u>				
		Volume	120mL	60mL	120mL	60m	L 60mL				
			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instructi	i/	i.			
SAMPLE ANALYSIS	ı				س ا	/ (ļ]) }	
						N.	1/2,1				
Sample No. Matrix * Sam	le Date	Sample Time				<u> </u>					
B16W79 SOIL 4//	8/03	1358	7	+	Υ.	<u>/</u>					
CHAIN OF POSSESSION S	gn/Print Names	3		SPEC	IAL INSTR	UCTIC	, . ,	122/03			Matrix *
0.50	d By/Stored In I A 3728		1645				el range compounds fr		wbon-14: ** The labora alysis.	tory is to	S=Soil SE=Sediment
Pate/Time Date/Time	d Duffrored in	. Da	te/Time	—	chnetium 99:	Strontiun	1-89.90 Total Sr. Isc	otopic Thorium (Thorium-232); Carbon-	H: Indine	SO=Solid SI=Studge
REF 14 3728 5103 1100 Received From	GALEST	Sol 51	03 110		lickel-63, Nep						W = Water O=Oil
Relinquished By/Removed From Date/Time Receive SJGALE & Jale 5103 1100 F	ed By/Stored Ja ED EX	Da	te/Time				, , , ,	l ·			A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From Date/Time Receiv	Da	te/Time) 03 0°	94							T=Tissue WI=Wipe L=Liquid	
Relinquished By/Removed From Date/Time Receiv	te/Time		rsonnel not inquish sam	availab iples_fro	le to om the 3728 /_1_/03		•		V=Vegetation X=Other		
Relinquished By/Removed From Date/Time Receiv	Da	te/Time	Re	ſ#_ <i>∐}</i> _o¤	<u>د</u> _ n	1_1_12,2					
LABORATORY Received By SECTION		Title	e					r	Date/Time		
FINAL SAMPLE Disposal Method											

FH-Central Plate	au Project	1	CHA	IN OF CUST	ODY/S	AMPLI	E ANAL	YSIS	REQUEST	,]	F0:	3-006-63	Page 1	of 1
Collector Johansen/Pope/Pfister		Con	npany (Contact	Telepho 373-3	ne No.			Project Coordin	etor	Price Code	8N	Data Tu	rnaround
Project Designation 200-PW-2/200-PW-4 OU - F	Sorehole Soil Sampling			Location 7 (C4106); (17.5'-20'	"	· · · · · · · · · · · · · · · · · · ·			SAF No. F03-006		Air Quality		45]	Days
Ice Chest No.	6 056		ld Logb	ook No. 3361		COA 117504E	S10		Method of Ship Federal Expre					
Shipped To EBERLINE SERVICES (FO	RELLA medy TMA) - Apr 4	1/22/03 On	site Pro	operty No.	103	02	20		Bill of Lading/	Alr Bill N	10. SEE	- 0390		
POSSIBLE SAMPLE HAZA				Preservation	Cool 4C	Cool 4C	Cool 4C	Non	e None					
			T,	ype of Container	aG	aG	aG	aG	n.d			1		
Special Handling and/or S	Storage		<u> </u>	o. of Container(s)	1	 	1	1	1/1			1		
				Volume	120mL	60mL	120mL	60m	L 60mL		1	<u> </u>		
	SAMPLE ANALYSIS				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413,1	See item Speci Instructi	ions/					
								1 19	41410'					
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B16W80	SOIL	4/28/	63	1560	*	X	<u> </u>	<u> </u>		<u> </u>		 		
										·		 	<u> </u>	
CHAIN OF POSSESSION	NC		rint Nar	mes	<u> </u>	SPE	CIAL INSTR	L	 DNS	-187	- 4/21/	<u></u>	<u> </u>	Matrix *
Relinquished By/Removed From	Date/Time (695	Received By	Stored in	28 42803	1645		The laboratory is not both kerosene	to schies and dies	ve a detection limit of el range compounds	f 50.0 pGi/ from WTP	g for Carbon-14. H-D analysis.	-** The labora	tory is to	S=Soil SE=Sediment
Relinquished By/Removed From	Date/Time	Received By	Stored In	Da Da	ate/Time		Technetium 99; Nickel-63; Nep		n-89.90 Total Sr;		orium (Tuorium- //22/0}	232}; Carbon-	4; lodine-	SO-Solid SI-Sludge W = Water
Relinquished By/Removed from		Received By	Stored In	Da	te/Time				75	11				O-Oil A=Air DS=Druse Solids DL=Drum Liquids
Relinquished By/Removed from	Date/Time		DE/ Stored In		te/Time									T=Tixsuc W1=Wipe
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Relinquished By/Removed From	Received By	Stored In										Date/Time		
LABORATORY Received E SECTION			itie 											
FINAL SAMPLE Disposal N DISPOSITION	lethod	-					Dispo	sed By					Date/Time	

FH-Central Platea	u Project	IAIN OF CUST	ODY/S	AMPLE	ANAL	YSIS	REQUEST	F	3-006-64	Page 1	of 1	
Collector Johansen/Pope/Pfister		Compa	ny Contact Iulstrom	Telephor 373-39	ne No.			Project Coordinate TRENT, SJ	Price Code	8N	Data Tur	→
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling	Sampli 216-	ing Location A-37 (C4106); (27.5'-30)')				SAF No. F03-006	Air Qualit	y 🗆	45 I	Days '
Ice Chest No. ER C 9	16 056		ogbook No. F-N-3361		COA 117504ES	10		Method of Shipmer Federal Express				
	LELRA	Offsite	Property No.	030	22	D		Bill of Lading/Air	Bill No. 362	-037		
POSSIBLE SAMPLE HAZA		7-7-						/			-	
	•		Preservation	Cool 4C	Cool 4C	Cool 4C	Non	e None			})
Cassial Handling and/or C	*******	, 	Type of Container	aG	aG	aG	aC	96				
Special Handling and/or S	torage		No. of Container(s)	1	1	1		1				
			Volume	120mL	60mL	120mL	60m	L 60mL				
		· · · · · · · · · · · · · · · · · · ·		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci			 		
	SAMPLE ANALYSIS					ŀ	Instruct	irm. juz		ł		}
							18/			Tico		
Sample No.	Matrix *	Sample Date	Sample Time							INCID		
B16W81	SOIL	4/29/03		X	1	K	/		ييد ميسانية في الاستان	Bluw	7/1	SUF)
		<u> </u>	<u> </u>	 	 	<u> </u>	/			0.00	- · · · ·	7
					 	 						
CHAIN OF POSSESSIO		Sign/Print			SPEC	CIAL INSTI	RUCTIO	ONS 1814 We a desection that of 50	4/22/6}	* ** The laborat	orv is to	Matrix *
THUMOTON PROPERTY	L 4179103 1400	Received By/Stor	ed in ERC De Rochiber 4	341631		both kerosen	and dies	el range compounds from	n WTPH-D analysis.		, :-	S=Soil SE=Sosiment SO=Solid
Relinguished By/Removed From	Date/Time 14 00	Received By/Stor		ite/Time	4 00 (I)	<u>echnetium 99,</u> Nickel-63: Nei	Suonum Suonum-2	17-89,90 — Total Se, Isote		F232) , Carbon-l	4; Iodine-	SI=Sludge W = Water
Relinquished ByrRemoved From	Date/Time	Received By/Stor		ate/Time				1 1 gc 4	1/12/03			O=Oil
	03 1100	SJGA	u still	5/03 ate/Time	1106				•			DS=Drum Solids DL=Drum Liquids T=Tissue
Relinquished By/Removed From Date/Time Received By/Stored In SIGNUMUL 5103 1100 FED EX												W!=Wipc L=Liquid
Refinquished By/Removed From	ed In Da	ate/Time	Pe	rsonnel not	availab	le to				V=Vegetation X=Other		
Relinquished By/Removed From	5.2 03 0975 Date/Time	Received By/Stor		te/Time	Re	f# /B _or	iples fro	om the 3728				
											-	
LABORATORY Received By SECTION		Ti	tle					Ľ	Date/Time			
FINAL SAMPLE Disposal Me DISPOSITION				Dispo	osed By			I	Date/Time			

Collector Collector Company Contact Telephone No. TRENT, SI Project Coordinator TRENT, SI SAF No. Folicy Country Contact Trent Collector Trent Collector Trent Collector Trent Collector Trent Collector Trent Collector Trent Collector Trent Trent Trent Collector Trent T	FH-Central Pla	ateau Project	CI	IAIN OF CUST	ODY/S	AMPLE	ANAL'	YSIS	REQUEST		F0:	3-006-65	Page 1	of 1
250-FW-2200-FW-4 OU- Borchole Soil Sampling 216-A37 (CA190); 03.5-A07 Field Legbook No. 1759-18510 Fiel	Collector Johansen/Pope/Pfister		Compa	ny Contact	Telepho	se No.			Project Coording	tor	Price Code	8N		
Contained Description Cont	Project Designation 200-PW-2/200-PW-4 Of	U - Borehole Soil Sampling)')						Air Quality		45]	Days
Contained Description Cont	Ice Chest No. ER C	9.6 055					10		Federal Expres	S				
Preservation Special Handling and/or Storage Type of Container No. of Continer(t) No. of Container	Shipped To	RECRA 181		Property No.	030	220	2		Bill of Lading/A	ir Bill N	No. 558	OSPC		
Special Handling and/or Storage Type of Container of storage Type of Container of storage Type of Container of storage No. of Container() 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			7-7-			7	}					1	}	}
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Sample No. Matrix * Sample Date Sample Time Significant No. Matrix * Sample Date Sample Time Bi6W82 SOIL 4/39/63 0900 7	· ·		,	No. of Container(s)	<u> </u>		<u> </u>		-1/-1				<u></u>	
SAMPLE ANALYSIS Hen - 7196 151;2 413.1 Inspection function		!	Volume	120mL	60mL	120mL	60m	iL 60mL				{		
Sample No. Matrix * Sample Date Sample Time B16W82 SOIL 4/3/63 0900 B16W82 SOIL 4/3/63 0900 Matrix CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names Sign/Print Names Received By/Stored in Second Destruction with the stable of the s		SAMPLE ANAL	ysis					Spec	iai /					
B16W82 SOIL 4/19/63 0900 The B16W85 (USCF) CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names Relinguished ByRemoved From Date/Time Received By/Stored In Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time			<u></u>					y	W.	o o o o		TILTO:		
CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names CHAIN OF POSSESSION Sign/Print Names SPECIAL INSTRUCTIONS SPECIAL INSTRUCTION SPECIAL INSTRUCTION SPECIAL INSTRUCTION SPECIAL INSTRUCTION SPECIAL INSTRUCTION SPECIAL INSTRUCTION SPECIAL INSTRUCTION SPECIAL	Sample No.	Matrix *	Sample Date	Sample Time										
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Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Date/	Relinquished By/Remived From	Myrrs n 454 63140	ORF-LOCO	-R-4- h14-4	<i>7</i> 16319	tepor	both kerosen	e and dies	sel range compounds f	rom WTP	PH-D analysis.			SE=Sediment SO=Solid
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Refinquished By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Ref # 1D on 5 / 1 / 03 LABORATORY Received By LABORATORY SECTION Received By/Stored In Date/Time Received By/Stored In Date/Time Da	Relinguished By/Removed From	m Dalte/Tithe / 4-4		3728	4.29.	(1) 1			m-89,90 = Total Sr, 18	otopi c Th	1 2 /0 5	232); Gurbon 1	4; lodine-	W = Water O=Oil
Relinquished By/Removed From Date/Time Received By/Stored In MS103 Date/Time Personnet not available to relinquish samples from the 3728 Ref # 10 on 5 / 1 / 03 Relinquished By/Removed From Date/Time Received By/Stored In Date/Time Relinquished By/Removed From Date/Time Received By/Stored In Date/Time LABORATORY SECTION FINAL SAMPLE Disposal Method Received By/Stored In Date/Time Received By/Stored In Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time Date/Time	Relinquished By/Removed Fro	744		· / / · /		100								DS=Drum Solids DL=Drum Liquids
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SECTION FINAL SAMPLE Disposal Method Disposed By Date/Time			Received By/Sta			7/3 ^	ei# <u>///</u> 0	n <u> ب</u>	11103					
SECTION FINAL SAMPLE Disposal Method Disposed By Date/Time					T	itle						D	ate/Tune	<u> </u>
FINAL SAMPLE Disposal Method	i minorarioni					·	 							
		osal Method					Dispo	osed By					Jate/1 ime	

FH-Central Platea	u Project	CI	HAIN OF CUST	ODY/S	AMPI	LE ANAL	YSIS	REQUEST		F03	-006-66	Page 1	of 1
Collector Johansen/Pope/Pfister		Compa	any Contact Hulstrom	Telepho 373-3				Project Coordina TRENT, SJ	tor	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling		ing Location -A-37 (C4106); (47.5'-50	ר')				SAF No. F03-006	A	ir Quality		45 	Days —
Ice Chest No. ERC 9	6 055		Logbook No. F-N-3361		COA 117504		.	Method of Shipm Federal Express					
Shipped To EBERLINE SERVICES (For	ETRA MENTMA) 150 V		Property No.	307	220)		Bill of Lading/A	ir Bill No	. SEE	ospo		
EBERLINE SERVICES (FOI POSSIBLE SAMPLE HAZA	RDS/REMARKS		Preservation	Cool 4C	Cool 46		Nor						
Special Handling and/or S	torage	!	Type of Container	aG	aG 1	aG 1	aG	*G/		 		ļ	
	·		No. of Container(s) Volume	120mL	60mL		60m	iL 60mL				<u> </u>	
			<u> </u>	Chromium Hex - 7196	NO2/NO: 353.2		See item Speci Instruct	ai /] .		Tieto:			
Sample No.	Matrix *	Sample Date	Sample Time							nao.			
B16W83	SOIL	4/24/03	1020	K	X	+	/			BIGUE	9 (W	(F)	
					 		-					 	
CHAIN OF POSSESSIO		Sign/Prin	t Names	<u> </u>	SF	PECIAL INSTI	RUCTIO	ONS AS	i u	1/22/03	<u> </u>	<u> </u>	Matrix *
Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From 3728 5 1 0 Relinquished By/Removed From Relinquished By/Removed From	9729 4. Mill 51	te/Time 1993 1093 1093 1093 1093 1093 1093 1093 1093	40) r	eport both kerosen	Strontium	el range compounds fr n-89,90 - Total Sr, Isc	om WTPH			•	S=Soil SE=Sodiment SO=Solids SS=Sludge W = Water O=Oil A=Air DS=Drum Solids DL=Drum Liquids T=Tissue Wi-Wipe		
Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	Driesto 50	ate/Time 2-03 09 ate/Time	,x)=	Pe rel Re	rsonnel inquish f # / Ĉ	not available to samples from the	3728 • 3		·		L=Liquid V=Vegention X=Other		
LABORATORY Received B) SECTION		Ti	itle							Date/Time			
FINAL SAMPLE Disposal Months DISPOSITION	ethod					Dispo	osed By					Date/Time	

FH-Central Plat	eau Project	CI	HAIN OF CUST	ODY/S	AMPLI	E ANAL	YSIS	REQUEST		F0:	3-006-73	Page 1	of 1
Collector Johansen/Pope/Pfister	<u></u>	Comp	any Contact Hulstrom	Telephoi 373-3	ne No.			Project Coordin TRENT, SJ		Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU	Borehole Soil Sampling	Sampi 216	ing Location -A-37 (C4106); (17.5'-20	')			. 1	SAF No. F03-006		Air Quality		45]	Days
Ice Chest No. ER C	96 056		Logbook No. F-N-3361		COA 117504E	S10		Method of Ship Federal Expre					
		Offsite	Property No. AC	30	220)		Bill of Lading/	Air Bill	No.38E 0	3 p c		
POSSIBLE SAMPLE HA		<u> </u>		T	7	T	T		,				
			Preservation	Cool 4C	Cool 4C	Cool 4C	Noc	se None					
Special Handling and/o	r Storage		Type of Container	aG	a/G	aG-	■G	/				ļ	
	-		No. of Container(s)	1 120mL	1 60mL	1 120mL	60m				ļ	ļ	
			Volume	Chromium	NO2/NO3 -	Oil & Grease -	Sec item	/				ļ	
	SAMPLE ANALYSIS			Hex - 7196	353.2	413.1	Speci	iaĺ΄/ ,	•				
	- 						1	ν'					
Sample No.	Matrix *	Sample Date	Sample Time			1	17	ب نسيند. سيستان ج					
B16W90	SOIL	4/28/03	1510		 	 X		_			 	<u> </u>	
	-			 	 		-	- 			 	 	
CHAIN OF POSSESS	SION	Sign/Prin	t Names	<u> </u>	SPE	CIAL INSTI	RUCTIO	ONS 4	142	4/22/03		<u> </u>	Matrix *
Relinquished By/Removed From	Date/Time /4 4	10		itc/Time	34-4	The laboratory is	s to achic	ve a detection limit of	130.0 pC		** The laborat	tory is to	S-Soli
Greg / Garage / 10	Date/Time		3728 42803	16 4				n-89,99 Total Sr; I			7774-G. A	14.1.4/	SE=Sediment SO=Solid
Relinquished By/Removed From		Received By/Stor	** III		00 129	Nickel 63; Ne	otunium-2	32 yer	4//).	2/4}	232), Carton	A, HEBIIOS	SI=Studge W = Water
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2 Jane Alde	5/03 1100	<u>ا حالتا</u> ا	\ <u></u>					•					DS=Drum Solids DL=Drum Liquids
Relinquished By/Remaved From	yq	11e/Time - 03 09	41								T=Tissue WI=Wipe L=Liquid		
Relinquished By/Removed From	Received By/Stol	ed In Da	te/Time		Personnel relinquish,	not avai sample	lable to s from the 3728					V=Vegetation X=Other	
Received By/Removed From Date/Time Received By			red In Da	nte/Time		Ref # //	<u>→</u> on _ <u>.</u>	<u> </u>		,			
LABORATORY Received SECTION		Ti	tle						1	Date/Time			
<u></u>	Method					Dispo	osed By		 ,]	Date/Time	

FH-Central Platea	HAIN OF CUST	ODY/S	AMPLE	ANALY	SIS	REQUES	<u>T</u>	F(03-006-74	1 age 1	<u> </u>		
Collector Johansen/Pope/Pfister			nny Contact Huistrom	Telepho 373-3				Project Coord TRENT, SJ	linator	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling		ing Location -A-37 (C4106); (0.5')	·			-	SAF No. F03-006		Air Qualit	у 🗆	45	Days ڃ
ice Chest No. ERC 9	6 056		Logbook No. F-N-3361		COA 117504ES	10	:	Method of Sh Federal Exp	ress	· 			
Shipped To MS:	5103 RECRI	Offsite	Property No. AO	30 Z	20			Bill of Ladin	g/Air Bil	No.S&&	05/20		
POSSIBLE SAMPLE HAZA	RDS/REMARKS				1	}						1	}
·		. 1	Preservation	Cool 4C	Cool 4C							<u> </u>	
Special Handling and/or S	torage	!	Type of Container	aG	aG						 		<u> </u>
			No. of Container(s)	,	<u> </u>								<u> </u>
	Volume				250mL								
·	SAMPLE ANALYSIS Samula No. Samula Data Samula Tim												
Sample No.	Matrix *	Sample Date	Sample Time	v	Carrent Co.								
B16W91	SOIL	4/28/03	1130	X	X				Ţ				
					 								
				 	ļ							<u> </u>	
					 							 	
OHAIN OF BOSSESSIO	N.	Sign/Prin	t Names	<u> </u>	Lebec	IAL INSTRI	uctio	NC NC				<u>.L</u>	Matrix *
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SECTION	SECTION						ed By				 -	Date/Time	
FINAL SAMPLE Disposal M DISPOSITION								·					

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

ENT: TNU Hamford

:hase Order/Project:

DATE: 5-2-03

** SOW#/Release #: FO3-006

oratory SDG #:

03051329

	ALL ENTRIES MARKED "NO" MUST BE I Custody seals on coolers or shipping				
•	container intact, signed and dated?	Yes	D No	O N/A	see Comment i
!.	Outside of coolers or shipping containers are free from damage?	Yes	D No	□ N/A	🖸 see Comment
١,	Airbill # recorded?	Yes	□ No	D N/A	D see Comment
١.	All expected paperwork received (coc and other client specific: historical data, alpha/bets or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	D/Yes	□ No	DN/A	☐ see Comment
i.	Sample containers are intact?	7976	□ No	□ N/A	D see Comment
.	Custody seals on sample containers intact, signed and dated?	TY Yes	□ No.	D N/A	🛘 see Comment
	All samples on coc received?	Yes	D No	□ N/A	see Comment
i.	All sample label information matches coc?	DVYes	□ No	□ N/A·	D see Commen
	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	DINA	🖸 see Commen
0.	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	Yes	□ N ₀	D N/A	🗅 see Commen
1.	Where applicable, bar code labels are affixed to coc?	Dγes	□No	DONIA	aset Commer
12.	coc signed and dated?	Yes	□ No	□ N/A	🔾 see Comme
3.	coc will be faxed or emailed to client?	™ Yes	□ No	D N/A	🖸 sec Comme
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	D Yes	D No	MINA	🛘 see Comme

Cooler # / temp (°C) and Comments:

Elc 96.056 / 13"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dymon

Lionville Laboratory, Inc. 8015 ANALYTICAL DATA PACKAGE FOR TNUHANFORD F03-006 H2194

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
			·			
B16W79	001	s	03LE0586	04/28/03	05/15/03	05/15/03
B16W80	002	S	03LE0586	04/28/03	05/15/03	05/15/03
B16W81	003	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W81	003 MS	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W81	003 MSD	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W82	004	S	03LE0586	04/29/03	05/15/03	05/15/03
B16W83	005	s	03LE0586	04/29/03	05/15/03	05/15/03
B16W90	006	S	03LE0586	04/28/03	05/15/03	05/15/03
LAB QC:						
			ř			
BLK	MB1	s	03LE0586	N/A	05/15/03	05/20/03
BLK	MB1 BS	S	03LE0586	N/A	05/15/03	05/15/03



for aline



Analytical Report

Client: TNU-HANFORD F03-006

LVL#: 0305L329

SDG/SAF # H2194/F03-006

W.O. #: 11343-606-001-9999-00 **Date Received:** 05-02-2003

GC SCAN

Six (6) soil samples were collected on 04-28,29-2003.

The samples and their associated QC samples were prepared according to method 3580A (waste dilution-1g into 5mL) on 05-15-2003 and analyzed according to Lionville Laboratory OPs based on SW846, 3rd Edition procedure, based on method 8015B on 05-15,20-2003 for Ethylene Glycol.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

- 1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 2. Samples were prepared outside of holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
- 3. Surrogates are not currently employed in the methodology.
- 4. The blank spike recovery was within acceptance criteria.
- 5. The matrix spike recoveries were within acceptance criteria.
- 6. All initial calibrations associated with this data set were within acceptance criteria.
- 7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
- 8. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Jain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

r:\group\data\gcsc\tunu\0305-329.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 1 5 pages.

Lionville Laboratory Sample Discrepancy Report (SDR) SDR #: 0366 198	_
Initiator: John Lack Batch: 0305 L 324 334, 3 57,3 ¹¹ Parameter: 06050 EC. Date: 615193 Samples: A11 324, A11 Matrix: 50.1 Client: +NU Method: 5W846/MCAVW/CLP/ Prep Batch: 03 L 0 5 80.	
1. Reason for SDR a. COC Discrepancy Tech Profile Error Client Request Sampler Error on C-O-C Transcription Error Wrong Test Code Other Discrepancy Missing Sample/Extract Container Broken Wrong Sample Pulled Label ID's Illegible Hold Time Exceeded Insufficient Sample Preservation Wrong Received Past Hold Improper Bottle Type Not Amenable to Analysis Note: Verified by [Log-In] or [Prep Group] (circle)signature/date: C. Problem (Include all relevant specific results; attach data if necessary) SAMPCS 325(-4 extrately buys Post hold Sample	
3. Discussion and Proposed Action Re-log Entire Batch Following Samples: Re-leach Re-extract Re-digest Revise EDD Change Test Code to Place On/Take Off Hold (circle) 4. Project Manager Instructionssignature/date: Concur with Proposed Action Disagree with Proposed Action; See Instruction Include in Case Narrative Client Contacted: Date/Person Add Cancel	
5. Final Actionsignature/date: 6 6 6 6 6 6 6 6 6 6	
X Lab General Manager: M. Taylor Inorganic: Perrone X Project Mgr: Stone/Johnson/Haslett GC/LC: Kiger X Technical Mgr: Wesson/Daniels MS: Rychlak/Layman X QA (file) Log-in: Melnic Data Management: Feldman Admin: Soos Sample Prep: Beegle/Kiger Other:	



DATA QUALIFIERS

- U = Indicates that the compound was analyzed for but not detected. The minimum detection limit for the sample (not the method detection limit) is reported with the U (e.g., 10U).
- J = Indicates an estimated value. This flag is used in cases where a target analyte is detected at a level less than the lower quantification level. If the limit of quantification is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- **DL** = Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not Applicable.
- **DF** = Dilution Factor.
- NR = Not Required.
- SP = Indicates Spiked Compound.



- P = This flag is used for an GC SCAN target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
- **D** = This flag identifies all compounds identified in an analysis at a secondary dilution factor.
- C = This flag applies to a compound that has been confirmed by GC SCAN.

Lionville Laboratory, Inc.

Nonhalogenated Volatiles by GC, Method 8015

Client: TNUHANFORD F03-006 H2194 Work Order: 11343606001 Page: 1 RFW Batch Number: 0305L329 B16W80 B16W81 B16W81 B16W81 B16W82 Cust ID: B16W79 003 MSD 004 Sample RFW#: 001 002 003 003 MS SOIL SOIL Information SOIL SOIL Matrix: SOIL SOIL D.F.: 1.00 1.00 1.00 1.00 1.00 1.00 Units: ug/Kg ug/Kg uq/Kg ug/Kg ug/Kg ug/Kg Ethylene Glycol 25.5 U 23.5 U 26.0 U 99 % 97 % 25.5 U BLK BS B16W83 B16W90 BLK Cust ID: Sample RFW#: 005 006 03LE0586-MB1 03LE0586-MB1 Information Matrix: SOIL SOIL SOIL SOIL 1.00 1.00 1.00 D.F.: 1.00 Units: uq/Kq uq/Kg ug/Kg ug/Kg 24.0 U 22.0 U 25.0 U 108 % Ethylene Glycol

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not reported. NS= Not spiked. %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

Abu 11.9/3

Report Date: 06/19/03 15:11

Custody Transfer Record/Lab Work Request Page ___ of ___

0305L329 FIELD PERSONNEL: CO									OMPI	LET	E ONL	Y SHAD	ED A	REAS	S	B						C	D		KVRUL LAL			
and The Man Cod To 7 and 7							\neg	Refrigerator #						2	a						2	9	5			\overline{C}		
Client Thu-Hanford Fo3-oxe							}	#/Type Container			Liquid															<u>V</u>		
Est. Final Proj. Sampling Date												Solid			IAG	186						JAG	190	196				
Project Contact/Phone #									Volu			Liquid							-1									
Lionville Laboratory Project Manager									VOIU			Solid		<u> </u>	(00	250						20	ca	190				
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0-16-03 Date Rec'd 5-2-03 Date Due 6-16-03							ANALYSES REQUESTED			-	δ V	ANB	Pest PCB PCB	Herb	{			Metal	ORG Z									
MATRIX		T				Mat	Matrix		T			Ŀ	↓ Lionville Laboratory Use Only ↓															
CODES: S - Soll SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate Wi - Wipe X - Other F - Fish	Lab 10	Client ID/Description				QC Chosen (V)		Matr	rix C	Date Collected	Time Collected			H BOT	SHBA K						TCRo	Inana	TOGGR			<u>i</u>		
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Special Instruc	tions:	20	m	mix G	·C		1	DATE	REVIS	SIONS	S: 0	01 1			1					Ī		Lionv	ile Lab	oratory	Use O	nly		
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	5 OPCB ODRO DERO) Receir			_																
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Lionville Laboratory Use Only

														
FH-Central	l Plateau Project	C	HAIN OF CUST	ODY/S	AMPLI	E ANAL	REQUEST		F0:	Page 1	of 1			
Collector Johansen/Pope/Pfis	ter		any Contact Hulstrom	Telepho 373-3				Project Coordinate TRENT, SJ	tor	Price Code	8N		rnaround	
Project Designation 200-PW-2/200-PW	-4 OU - Borehole Soil Sampling		ing Location -A-37 (C4106); (12.5'-15	i')				SAF No. F03-006	1	Air Quality		45 Days		
Ice Chest No. EX	2 4 9 6 05 4	HN	Logbook No. F-N-3361		COA 117504ES	310		Method of Shipn Federal Expres		•				
Shipped To ESERLINE SERV	RECRA		Property No. A	30	22	0		Bill of Lading/A						
	E HAZARDS/REMARKS					T] _	- T X			Ţ — —]		
			Preservation	Cool 4C	Cnol 4C	Cool 4C	Non	/_				<u> </u>	<u></u>	
Special Handling	and/or Storage		Type of Container	aG	aG .	aG	aG	/						
:			No. of Container(s)	1	1 1	1	1	/'		-		ĺ		
			Volume	120mL	60mL	120mL	60m	. 60mL						
	SAMPLE ANA	LYSIS		Chromium Hex - 7196	NO2/NO3 - 353.2			4/						
	·						100	1/20						
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B16W79	SOIL	4/2.8/03	1350	/	+	X	<u>/</u>				<u> </u>			
		 												
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Greg Therense	Date/Time		3728 42803	te/Time				1-89 90 - Total Sr; iso		•	SO=Solid			
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Relinquished By/Removed		Received By/Stor		tc/Time				17- 1			O=Oil A=Air			
SJGALE &	11.0111		~~										DS=Drum Solids DL=Drum Liquids	
Relinquisted By/Removed		Bassined Bulker		te/Time - 203 O	94								T=Tissue W!=Wipe L=Liquid	
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LABORATORY F	Received By			Tit	ile						D	ate/Time	_	
	Disposal Method		· · · · · · · · · · · · · · · · · · ·			Dispo	sed By				Ē	Date/Time		
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				STODY/SAMPLE ANALYSIS REQUEST F03-006-63 Page 1						of 1						
Collector Johansen/Pope/Pfi	ster				ny Contact Iulstrom	Telepho 373-3	ne No. 928				Project Coordii TRENT, SJ	ator	Price Code	8N	Data Turnaround	
Project Designation 200-PW-2/200-PV		ole Soil Sampling			ing Location A-37 (C4106); (17.5'-20))					SAF No. F03-006		Air Quality		45	Days
Ice Chest No.	c 96	056	,		ogbook No. -N-3361		COA 117504	ES10			Method of Ship Federal Expre					9
Shipped To EBERLINE SERV		ECRA BY TMA) - ASV	1/22/02	Offsite	Property No.	403	ÔΖ	20			Bill of Lading/	Air Bill N	10. SOE	0390	_	
POSSIBLE SAMP						Cool 4C	Cool 40	C Cool	ic i	None	None					
i 					Preservation	aG	aG	aG	-	aG	ad		-	 '	 	
Special Handling	and/or Stor	age		ļ	Type of Container	1	 	1		1			- 	 		
:					No. of Container(s) Volume	120mL	60mL	120a	1 6	Oml	60ml.			 		
	SAMPLE ANALYSIS			Chromium Hex - 7196	NO2/NO3 353.2		l s	tem (1) pecial ruction	^/ I							
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LABORATORY SECTION	Received By	<u>`</u> _				Ti	tie							Γ	ate/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	i							Disposed By	y					Date/Time	

FH-Central Plateau Project CHAIN OF CUSTODY/S					AMPLI	EANALY	YSIS	REQUEST		F03	3-006-64	Page 1	of l
Collector Johansen/Pope/Pfister		Compa	ny Contact Iulstrom	Telephon 373-39	e No.			Project Coordin TRENT, SJ	etor (Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - Be	orehole Soil Sampling	Sampli 216-	ng Location A-37 (C4106); (27.5'-30	າ				SAF No. F03-006		Air Quality		45 1	Days
Ice Chest No. ER C	16 056	i unit	ogbook No. -N-3361		COA 117504ES	S10		Method of Ships Federal Expres					2
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POSSIBLE SAMPLE HAZA	RDS/REMARKS	Try -		[/				
		:	Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	e None				·	
Special Handling and/or S	torage		Type of Container		aG	aG	aG	36					
Special Manding and of D			No. of Container(s)	1	1	1	1	1					
	•		Volume	120mL	60mL	120mL	60sn	L 60mL					
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease -	See item Speci			_			
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CHAIN OF POSSESSIO	N	Sign/Print	Names	<u> </u>	SPE	CIAL INSTR	UCTIO	ONS 182	4/22	103	<u> </u>		Matrix *
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FINAL SAMPLE Disposal Moderation	ethod	··· <u>-</u>		-		Dispo	sed By	 -			D	ate/Time	·—-—-
<u> </u>				 -									

FH-Central Platea	entral Plateau Project CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-006-65 Page 1 of								of 1			
Collector Johansen/Pope/Pfister			ny Contact Iulstrom	Telephor 373-3				Project Coordinato TRENT, SJ	Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling	Sampli 216-	ing Location A-37 (C4106); (37.5'-40	')				SAF No. F03-006	Air Qualit	у 🗆	45 1	Days
ice Chest No. ERC 9.6	, 056		ogbook No. ?-N-3361		COA 117504ES1	0		Method of Shipmen Federal Express	•			
Shipped To EBERLINE SERVICES (For	ZECRA 182		Property No.	030	220)		Bill of Lading/Air	Bill No. 588	-aspc		
POSSIBLE SAMPLE HAZA	RDS/REMARKS							1 /		•		}
			Preservation	Coal 4C	Cool 4C	Cool 4C	Nor	ne None				
Special Handling and/or S	torage		Type of Container	aG	aG .	aG	aC					
No. of Container(s				l I	1	1	1	/				
Volume					60mL	120mL	60п	nL 60mL				
SAMPLE ANALYSIS					NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Spec Instruct	iai /		Tieto:		
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SECTION						<u> </u>			- ,	·		
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FH-Central Plateau Project CHAIN OF CUSTODY/SAMPLE ANALYSIS					SIS REQUEST			F03-006-66 Page 1		of 1			
Collector Johansen/Pope/Pfister		Compa	ny Contact Hulstrom	Telephor 373-39	e No.			Project Coordi TRENT, SJ		Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling		ing Location -A-37 (C4106); (47.5'-50	')				SAF No. F03-006		Air Quality		45	Days
Ice Chest No. ERC 9	6 055		Logbook No. F-N-3361		COA 117504ES	10		Method of Ship Federal Expre	SS				2
Shipped To EBERLINE SERVICES (FO	ETRA The	Offsite	Property No.	307	20			Bill of Lading	Air Biil	No. 5EE	050	<u>. </u>	
POSSIBLE SAMPLE HAZA	RDS/REMARKS	41-1-	Preservation	Cool 4C	Cool 4C	Cool 4C	Non	ne None	}				
Special Handling and/on S	Storage	ļ	Type of Container	aG	aG	aG	aG	aG/					
Special Handling and/or S	otorage		No. of Container(s)	i	l	l 	}						
			Volume	120mL	60mL	120mL	60m	ıL 60mL					
	Chromium Hex - 7196 353.2 Oil & Grease - See item (1) in Special Instructions.						iái / l 、		7.4.78				
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FINAL SAMPLE Disposal M DISPOSITION	lethod					Dispo	sed By					Date/Time	

FH-Central Plateau Project	CHAIN OF COSTOD TISSUM LE ANALTSIS REQUEST					3-006-73	Page 1	of <u>i</u>			
Collector Johansen/Pope/Pfister	Company Contact LC Hulstrom	Telepho 373-3	one No. 3928		_	Project Coordii TRENT, SJ	ator	Price Code	8N	Data Tu	rnaround
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling	Sampling Location 216-A-37 (C4106); (17.	.5'-20')				SAF No. F03-006		Air Qualit	у 🗆	45]	Days
Ice Chest No. ERC 96 056	Field Logbook No. HNF-N-3361		COA 117504ES	10	_	Method of Ship Federal Expre					3
Shipped To PERLA Shipped To PERLA	Offsite Property No.	4030	220			Bill of Lading/		No. 5 8 6	13 P C	<u> </u>	
POSSIBLE SAMPLE HAZARDS/REMARKS	<u> </u>		Τ	T	<u> </u>		<u> </u>		ا ٔ ا		
	Preservation	Cool 4C	Cool 4C	Cool 4C	Non	e None		<u> </u>			
Special Handling and/or Storage	Type of Contain	aG ier	a/G	aG	aG	ag					
Special Filmoung and or Storage	No. of Container		1	1	'	1			<u> </u>		
	Volume	120mL	60mL	120mL	60m	L 60mL			1		
		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Gresse - 413.1	See item Speci Instructi	ĭ /} .					
SAMPLE ANALYSIS	AST SIZE										
Sample No. Matrix * Sam	ole Date Sample Tin	ne .									
B16W90 SOIL 4/7	803 1510	X	K	X							
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	ign/Print Names			CIAL INSTE			142	4/22/03			Matrix *
Relinquished Dy Removed From Date/Time 1645 Received Speed Speed Speed Speed Received Reserve	ed By/Stored In = 12 3728 4280	Date/Time 03 164				e a detection limit of a range compounds			** The labora	tory is to	S=Soil SE=Sedimen
Relinquished By/Removed From Date/Time Receiv	ed By/Stored In	Date/Time	—- ₁₀₁ 1	echnotium 99;	Suomiun	89,90 - Total Sr, I		, -	-232), Carbon	4; Iodine	SO=Solid S1=Sludge
REF IN 3728 5 103 1100 Su			129;	Nickel 63; Ne	tunium-2	12 yer	4/22	(*)			W = Water O=Oil
	ed By/Stored M ーピン・モメニ	Date/Time									A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From Date/Time Received Society 5.2.03 09-15	ed By/Stored in	Date/Time	200								T+Tissue W!=Wipe L=Liquid
Relinquished By/Removed From Date/Time Receiv	Date/Time	71	Personnel	not avai	lable to					V=Vegetation X=Other	
Relinquished By/Removed From Date/Time Receiv	Date/Time		Ref #	on	from the 3728		•				
LABORATORY Received By SECTION		т	ide						I	Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION				Dispo	sed By					Date/Time	

FH-Central Platea	CI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								1 480 4	·		
Collector Johansen/Pope/Pfister			ny Contact Iulstrom	Telepho 373-3	ne No. 928			Project Coord TRENT, SJ	inator	Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling		ng Location A-37 (C4106); (0.5')					SAF No. F03-006		Air Quality		45 Days	
Ice Chest No. ERC 9	0 0 5 6		.ogbook No. 7-N-3361		COA 117504ES1	0		Method of Shi Federal Exp	ess				立
Shipped To AND SERVICES (For	5103 RECRI	Offsite	Property No. AO	30 Z	20			Bill of Lading	/Air Bill	[№] .5&&	05/20	<u>-</u>	
POSSIBLE SAMPLE HAZA	RDS/REMARKS			1					}	}	1	1	1
			Preservation	Cool 4C	Cool 4C						<u> </u>	j]
			Type of Container	aG	æG				1			1	
Special Handling and/or S	torage		No. of Container(s)	1	1			-	 				
			Volume	60mL	250mL			_					
SAMPLE ANALYSIS				Pesticides - 808 t	Chioro- Herbicides - EPA8151								
													101 TT J. J. J. J. J. J.
Sample No.	Matrix *	Sample Date	Sample Time						حبب كأث				
B16W91	SOIL	4/28/03	1130	_X_	1 2				 		 		
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				ļ					 		 	 	
				<u> </u>	يحيي						 _	1	Matrix *
Relinquished By/Removed From Relinquished By/Removed From	Date/Time	1	ed in Di 3728 4250° ed in Di	ate/Time	5	ial instr	oc n						S=Soil SE=Sodiment SO=Solid SI=Sludge
Relinquished By/Removed From	5103 1100 Date/Time 5103 (100	SSGALEN Received By/Stor		3 //	00								W = Water O=Oil A=Air DS=Draw Solids DL=Draw Liquids
Reliquished By/Removed From Date/Time Received By/Stored In				ate/Time 03 C ate/Tune	575	personnel IV	ot avails	stole to from the 3728	2				T=Tissue WinWipe L=Liquid V=Vegeunion X=Other
Reinquished By/Removed From Sales Line Received By/Select III				ate/Time		relinquish Ref # 14	on S						
Relinquished By/Removed From	27000 1 2000											Date/Time	L
LABORATORY Received By SECTION	; ;			T	itle								
FINAL SAMPLE Disposal Method DISPOSITION					= 	Dispo	sed By					Date/Time	

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

IENT: TNU Hamford

chase Order/Project:

DATE: 5-2-03

F#Y SOW# / Release #: FO3-006

poratory SDG #:

03051329

	00030327				
)TE:	ALL ENTRIES MARKED "NO" MUST BE E	EXPLAINED IN	THE COMM	ENT SECTION	· · · · · · · · · · · · · · · · · · ·
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	D No	□ N/A .	D see Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes .	D No	E) N/A	☐ see Comment #
3.	Airbill # recorded?	Yes	D No	□ N/A	☐ see Comment#
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	Dives	□ N ₀	D N/A	D see Comment#
5.	Sample containers are intact?	7974	D No	D N/A	D see Comment #
6.	Custody seals on sample containers intact, signed and dated?	YYes	D No	DNA	D see Comment#
7.	All samples on coc received?	Yes .	D No	D N/A	□ see Comment #
8.	All sample label information matches coc?	D/Yes	□ No	□ N/A·	🗓 see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	DNA	See Comment #
10	. Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	Yes	□ No	D N/A	🗅 see Comment #
11	Where applicable, bar code labels are affixed to coc?	□ Yes	D No	DONIA	See Comment #
12	. coc signed and dated?	S/Yes	□ No	DNA	See Comment #
13	. coc will be faxed or emailed to client?	T Yes∙	□ No	D N/A	D see Comment #
14	Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	□ No	E N/A	□ see Comment #

Cooler # / temp (°C) and Comments:

ELC 96.056 / 1.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dignoon

15



DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79					·	
SILVER, TOTAL	001	s	03L0284	04/28/03	05/22/03	05/31/03
SILVER, TOTAL	001 REP	s	03L0284	04/28/03	05/22/03	05/31/03
SILVER, TOTAL	001 MS	s	03L0284	04/28/03	05/22/03	05/31/03
ARSENIC, TOTAL	001	s	03L0284	04/28/03	05/22/03	05/31/03
ARSENIC, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
ARSENIC, TOTAL	001 MS	s	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	001	s	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	001 REP	s	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	001 REP	s	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	001 MS	s	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001	s	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001 REP	s	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	001 MS	s	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL	001	s	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL REP	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL SPIKE	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	001 MS	s	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
MERCURY, TOTAL	001	S	03C0115	04/28/03	05/16/03	05/19/03
MERCURY, TOTAL	001 REP	S	03C0115	04/28/03	05/16/03	05/19/03
MERCURY, TOTAL	001 MS	S	03C0115	04/28/03	05/16/03	05/19/03
NICKEL, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
NICKEL, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
NICKEL, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
LEAD, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
LEAD, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03

LVL LOT # :0305L329

DATE RECEIVED: 05/02/03

	-, - -					
CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	001 MS	s	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	001	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	001 REP	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	001 MS	S	03L0284	04/28/03	05/22/03	05/31/03
B16W80						
SILVER, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
ARSENIC, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
MERCURY, TOTAL	002	S	03C0115	04/28/03	05/16/03	05/19/03
NICKEL, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
LEAD, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	002	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	002	s	03L0284	04/28/03	05/22/03	05/31/03
B16W81						
SILVER, TOTAL	003	s	03L0284	04/29/03	05/22/03	05/31/03
ARSENIC, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
BORON, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
BARIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	003.	S	03L0284	04/29/03	05/22/03	05/31/03
BISMUTH, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
CADMIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
CHROMIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
COPPER, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
MERCURY, TOTAL	003	S	03C0115	04/29/03	05/16/03	05/19/03
NICKEL, TOTAL	003	s	03L0284	04/29/03	05/22/03	05/31/03

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	003	s	03L0284	04/29/03	05/22/03	05/31/03
ANTIMONY, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
SELENIUM, TOTAL	003	S	03L0284	04/29/03	05/22/03	05/31/03
B16W82						
SILVER, TOTAL	004	s	03L0284	04/29/03	05/22/03	05/31/03
ARSENIC, TOTAL	004	s	03L0284	04/29/03	05/22/03	05/31/03
BORON, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
BARIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
BISMUTH, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
CADMIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
CHROMIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
COPPER, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
MERCURY, TOTAL	004	S	03C0115	04/29/03	05/16/03	05/19/03
NICKEL, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
LEAD, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
ANTIMONY, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
SELENIUM, TOTAL	004	S	03L0284	04/29/03	05/22/03	05/31/03
B16W83						
SILVER, TOTAL	005	s	03L0284	04/29/03	05/22/03	05/31/03
ARSENIC, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
BORON, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
BARIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
BISMUTH, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
CADMIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
CHROMIUM, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
COPPER, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
MERCURY, TOTAL	005	S	03C0115	04/29/03	05/16/03	05/19/03
NICKEL, TOTAL	005	· s	03L0284	04/29/03	05/22/03	05/31/03
LEAD, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
ANTIMONY, TOTAL	005	S	03L0284	04/29/03	05/22/03	05/31/03
SELENIUM, TOTAL	005	s	03L0284	04/29/03	05/22/03	05/31/03
B16W90						
SILVER, TOTAL	006	s	03L0284	04/28/03	05/22/03	05/31/03

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
						· ·
ARSENIC, TOTAL	006	s	03L0284	04/28/03	05/22/03	05/31/03
BORON, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
BARIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
BERYLLIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
BISMUTH, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
CADMIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
CHROMIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
COPPER, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
MERCURY, TOTAL	006	S	03C0115	04/28/03	05/16/03	05/19/03
NICKEL, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
LEAD, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
ANTIMONY, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03
SELENIUM, TOTAL	006	S	03L0284	04/28/03	05/22/03	05/31/03

LAB QC:

SILVER LABORATORY	LC1 BS	s	03L0284	N/A	05/22/03	05/30/03
SILVER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ARSENIC, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BORON LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BORON, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BARIUM LABORATORY	LC1 BS	s	03L0284	N/A	05/22/03	05/30/03
BARIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BERYLLIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, LCS	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
BISMUTH, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CADMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
CHROMIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
COPPER LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
COPPER, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
MERCURY LABORATORY	LC1 BS	S	03C0115	N/A	05/16/03	05/19/03
MERCÜRY, TOTAL	MBl	S	03C0115	N/A	05/16/03	05/19/03
NICKEL LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
NICKEL, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03

DATE RECEIVED: 05/02/03

LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	МТХ	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TAR INDORATION	LC1 BS		03L0284	N/A	05/22/03	05/30/03
LEAD LABORATORY LEAD, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
ANTIMONY, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM LABORATORY	LC1 BS	S	03L0284	N/A	05/22/03	05/30/03
SELENIUM, TOTAL	MB1	S	03L0284	N/A	05/22/03	05/30/03



Analytical Report

Client: TNU-HANFORD F03-006

LVL#: 0305L329

SDG/SAF#: H2194/F03-006

W.O.#: 11343-606-001-9999-00

Date Received: 05-02-03

METALS CASE NARRATIVE

1. This narrative covers the analyses of 6 soil samples.

- 2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary.
- 3. All analyses were performed within the required holding times.
- 4. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits.
- 6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
- 7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
- 8. All ICP Interference Check Standards were within control limits.
- 9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards Report.
- 10. The matrix spike (MS) recoveries for 2 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.
- 11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A serial dilution is performed for Mercury. A PDS was prepared at meaningful concentration level for the following analytes:

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of pages.

		<u>PDS</u>	PDS
Sample ID	<u>Element</u>	Concentration (ppb)	% Recovery
B16W79	Antimony	100	102.1
	Barium	200	37.7

- 12. The duplicate analyses for 3 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
- 13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.
- 14. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager

Lionville Laboratory Incorporated

gmb/m05-329

06-05-03

Date



METALS METHOD GLOSSARY

The following metal Lot#: 030513		ence for the digestic	on and analysis	of samples	contained within this
Leaching Procedur	re:131013111	312 _Other:			
CLP Metals Dig	estion and Analysis	Methods:ILM0	3.0 _ILM04.	0	
Metals Digestion M	lethods:3005A3 Other: _	010A301530	020A <u>/</u> 3050B	3051	200.7SS17
1	М	etals Analysis Me	ethods		
•		-		EPA	
	SW846	EPA	STD MTD	OSWR	USATHAMA
Aluminum	6010B	200.7			99
Antimony	$\sqrt{6010}$ B _ 7041 $^{\circ}$	200.7204.2			₉₉
Arsenic	₹ 010B <u>7060A</u> 5	200.7206.2	3113B		99
Barium	$\mathcal{T}_{6010\mathrm{B}}$ $-$. 99
Beryllium	7 6010B	200.7		•	₉₉
Bismuth	√6010B¹	200.7 1		1620	— 99
Boron	\mathcal{J}_{6010B}	200.7			99
Cadmium	$\sqrt{6010B}$ _ 7131A ⁵	200.7213.2			99
Calcium	6010B	200.7			<u></u> 99
Chromium	 2 6010B _ 7191 ⁵	200.7218.2			SS17
Cobalt		200.7			99
Copper	$\sqrt{2}6010B_{7211}$	200.7220.2	•		99
Iron	6010B	200.7			<u></u> 99
Lead	$\sqrt{6010B}$ _7421 ⁵	200.7239.2	3113B		<u>_</u> 99
Lithium	6010B7430 ⁴	200.7		1620	99
Magnesium	6010B	200.7			99
Manganese	6010B	200.7			<u>_</u> 99
Mercury	7470A '\(\frac{7471A}\)	245.1 ² 245.5 ²			<u>_</u> 99
Molybdenum	6010B	200.7			99
Nickel	<u>√</u> 6010B	200.7			<u>_</u> 99
Potassium	6010B7610 ·	200.7258.1 4		-	99
Rare Earths	6910B [;]	200.7 1		1620	99
Selenium	√6010B 7740 ⁵	200.7	3113B		99
Silicon	6010B ¹	200.7		1620	99
Silica	6010B	200.7		1620	99
Silver	√6010B7761 ^s	200.7272.2			<u>_</u> 99
Sodium	6010B7770 ⁴	200.7273.1 4			99
Strontium	6010B	200.7			99
Thallium	6010B7841 ^s	200.7279.22	00.9		<u></u> 99
Tin	6010B	200.7			99
Titanium	6010B	200.7			99
Uranium	6010B ¹			1620	99
Vanadium	-6010B	200.7			99
Zinc	6010B	200.7		•	99
Zirconium	6010B ¹	200.7		1620	99
Other:	Method			_	33/M-03/01 Q

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

ANALYTICAL METAL METHODS

- 1. Not included in the method element list.
- 2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, approximately 0.3 grams of sample is taken to a final volume of 50 mL (including all reagents).
- 3. Flame AA.
- 4. Graphite Furnace AA.

L-WI-033/N-04/98

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
****	************		======		********	******
-001	B16W79	Silver, Total	0.13 u	MG/KG	0.13	1.0
		Arsenic, Total	1.7	MG/KG	0.34	1.0
		Boron, Total	0.51	MG/KG	0.20	1.0
		Barium, Total	165	MG/KG	0.02	1.0
		Beryllium, Total	0.31	MG/KG	0.01	1.0
		Bismuth, Total	0.53 u	MG/KG	0.53	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	8.5	MG/KG	0.10	1.0
		Copper, Total	14.6	MG/KG	0.06	1.0
		Mercury, Total	0.02	MG/KG	0.02	1.0
		Nickel, Total	11.0	MG/KG	0.14	1.0
		Lead, Total	3.9	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.44 u	MG/KG	0.44	1.0

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

MOSK OKDEK: II343-606-001-3333-	WORK	ORDER:	11343-606-001-9999-0
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,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
22-22				*****	****	
-002	B16W80	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.2	MG/KG	0.34	1.0
		Boron, Total	0.58	MG/KG	0.19	1.0
		Barium, Total	86.8	MG/KG	0.02	1.0
		Beryllium, Total	0.18	MG/KG	0.01	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	6.1	MG/KG	0.10	1.0
		Copper, Total	13.3	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.8	MG/KG	0.13	1.0
		Lead, Total	3.0	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

					REPORTING	DILUTION
SAMPI	LE SITE ID	ANALYTB	RESULT	UNITS	LIMIT	FACTOR
E====					******	E#20025
-003	B16W81	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.2	MG/KG	0.32	1.0
		Boron, Total	0.36	MG/KG	0.19	1.0
		Barium, Total	76.2	MG/KG	0.02	1.0
		Beryllium, Total	0.21	MG/KG	0.01	1.0
		Bismuth, Total	0.50 u	MG/KG	0.50	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	7.1	MG/KG	0.1	1.0
		Copper, Total	12.0	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.8	MG/KG	0.13	1.0
		Lead, Total	2.9	MG/KG	0.23	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.41 u	MG/KG	0.41	1.0

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0305L329

NO.000	•••				REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
			****	*****		*****
-004	B16W82	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	1.9	MG/KG	0.34	1.0
		Boron, Total	0.36	MG/KG	0.20	1.0
		Barium, Total	78.5	MG/KG	0.02	1.0
		Beryllium, Total	0.15	MG/KG	0.01	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	4.6	MG/KG	0.10	1.0
		Copper, Total	13.8	MG/KG	0.06	1.0
	*	Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	6.8	MG/KG	0.13	1.0
		Lead, Total	2.7	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.43 น	MG/KG	0.43	1.0

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

REPORTING

DILUTION

WORK	ORDER:	11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
*****	*************************************		******	*====	********	
-005	B16W83	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	2.4	MG/KG	0.34	1.0
		Boron, Total	0.50	MG/KG	0.19	1.0
		Barium, Total	79.6	MG/KG	0.02	1.0
		Beryllium, Total	0.14	MG/KG	0.01	1.0
		Bismuth, Total	0.52 u	MG/KG	0.52	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	7.0	MG/KG	0.10	1.0
		Copper, Total	14.5	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.0	MG/KG	0.13	1.0
		Lead, Total	2.5	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

INORGANICS DATA SUMMARY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0305L329

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
*====	李明日本中国国际共享 医自己性 大汉 2	*******	****			*****
-006	B16W90	Silver, Total	0.12 u	MG/KG	0.12	1.0
		Arsenic, Total	1.9	MG/KG	0.34	1.0
		Boron, Total	0.42	MG/KG	0.20	1.0
		Barium, Total	74.9	MG/KG	0.02	1.0
		Beryllium, Total	0.17	MG/KG	0.01	1.0
		Bismuth, Total	0.53 u	MG/KG	0.53	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	6.2	MG/KG	0.10	1.0
		Copper, Total	12.8	MG/KG	0.06	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	7.6	MG/KG	0.13	1.0
		Lead, Total	2.9	MG/KG	0.24	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.43 u	MG/KG	0.43	1.0

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
*=====	**************	************		*****		
BLANK1	03L0284-MB1	Silver, Total	0.12 u	MG/KG	0.12	1.0
	•	Arsenic, Total	0.33 u	MG/KG	0.33	1.0
		Boron, Total	0.19 u	MG/KG	0.19	1.0
	•	Barium, Total	0.03	MG/KG	0.02	1.0
		Beryllium, Total	0.02	MG/KG	0.01	1.0
		Bismuth, Total	0.51 u	MG/KG	0.51	1.0
		Cadmium, Total	0.04 u	MG/KG	0.04	1.0
		Chromium, Total	0.10 u	MG/KG	0.10	1.0
		Copper, Total	0.06 u	MG/KG	0.06	1.0
		Nickel, Total	0.13 u	MG/KG	0.13	1.0
		Lead, Total	0.23 u	MG/KG	0.23	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.42 u	MG/KG	0.42	1.0
BLANK1	03C0115-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

INORGANICS ACCURACY REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194 WORK ORDER: 11343-606-001-9999-00 LVL LOT #: 0305L329

			SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT 1	*RECOV	Factor (SPK)
222====	*************		******	******			
-001	B16W79	Silver, Total	4.9	0.13u	5.2	94.2	1.0
		Arsenic, Total	192	1.7	209	91.2	1.0
		Boron, Total	93.8	0.51	104	89.4	1.0
		Barium, Total	299	165	209	64.1	1.0
		Beryllium, Total	5.2	0.31	5.2	94.0	1.0
		Bismuth, Total	479	0.53u	522	91.7	1.0
		Cadmium, Total	4.7	0.04u	5.2	90.4	1.0
		Chromium, Total	28.2	8.5	20.9	94.3	1.0
		Copper, Total	39.3	14.6	26.1	94.6	1.0
		Mercury, Total	0.21	0.02	0.17	116.9	1.0
	•	Nickel, Total	59.5	11.0	52.2	92.9	1.0
		Lead, Total	52.4	3.9	52.2	92.9	1.0
		Antimony, Total	30.3	0.23u	52.2	58.0	1.0
		Selenium, Total	181	0.44u	209	86.6	1.0

INORGANICS PRECISION REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194 LVL LOT #: 0305L329

			INITIAL			DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	REPLICATE	RPD	FACTOR (REP)
======	272157#65385235755		******			222222222
-001REP	B16W79	Silver, Total	0.13u	0.13u	ис	1.0
		Arsenic, Total	1.7	2.2	25.6	1.0
		Boron, Total	0.51	0.44	14.6	1.0
		Barium, Total	165	100	48.4	1.0
		Beryllium, Total	0.31	0.31	0.67	1.0
		Bismuth, Total	0.53u	0.53u	NC	1.0
		Cadmium, Total	0.04u	0.04u	NC	1.0
		Chromium, Total	8.5	12.3	36.5	1.0
		Copper, Total	14.6	13.9	4.9	1.0
		Mercury, Total	0.02	0.02	0.00	1.0
		Nickel, Total	11.0	12.1	9.5	1.0
		Lead, Total	3.9	3.9	0.00	1.0
		Antimony, Total	0.23u	0.23u	NC	1.0
		Selenium, Total	0.44u	0.44u	NC	1.0

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/04/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

			SPIKED	SPIKED		
SAMPLE	SITE ID	ANALYTB	SAMPLE	TRUOMA	UNITS	*RBCOV
	*************		*****	*****	*****	
LCS1	03L0284-LC1	Silver, LCS	49.1	50.0	MG/KG	98.2
		Arsenic, LCS	931	1000	MG/KG	93.1
		Boron, LCS	471	500	MG/KG	94.2
		Barium, LCS	505	500	MG/KG	100.9
		Beryllium, LCS	24.2	25.0	MG/KG	96.8
		Bismuth, LCS	491	500	MG/KG	98.2
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	50.6	50.0	MG/KG	101.2
		Copper, LCS	127	125	MG/KG	101.8
		Nickel, LCS	200	200	MG/KG	99.9
		Lead, LCS	243	250	MG/KG	97.4
		Antimony, LCS	291	300	MG/KG	97.0
		Selenium, LCS	890	1000	MG/KG	89.0
LCS1	03C0115-LC1	Mercury, LCS	6.9	6.2	MG/KG	110.7

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Lionville	Laboratory	Use	Only

Custody Transfer Record/Lab Work Request Page ____ of ___

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	LIONVILLE LABORATORY INC.

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5 OPCB ODAO OGRO													3) Received in Good			Good or N	41	Unbrok	(Y) or	r N					
1											• -							4)	Samp	les		4) Si	ampie (A) or	N
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FH-Central Platea	u Project	CI	HAIN OF CUST	ODY/S	AMPLE	ANALY	YSIS	REQUEST	T	F03	3-006-62	Page 1	of 1
Collector Johansen/Pope/Pfister		Compa	ny Contact Iulstrom	Telepho 373-3	ne No.			Project Coordin TRENT, SJ	ator	Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling		ng Location A-37 (C4106); (12.5'-15	j				SAF No. F03-006	A	Air Quality 45			Days
Ice Chest No. ERC 9			.ogbook No. -N-3361		COA 117504ES					•			
Shipped To EDERLINE SERVICES (For	RECRA morty TMA) AGC 4(22)	Offsite	Property No. AC	30	22	Bill of Lading/Air Bill No.					-05 P		
POSSIBLE SAMPLE HAZA					T		}]		
		1	Preservation	Cool 4C	Cnol 4C	Cool 4C	Nor					<u> </u>	
Special Handling and/or S	torage	İ	Type of Container	aG	aG l	aG	aG			 	 	ļ	
			No. of Container(s)	120mL	60mL	120mL	60п	_ /		_			
		<u>. </u>	Volume	Chromium	NO2/NO3 -	Oil & Grease -	See item	(1) in/ Tritium - H3				 	
	SAMPLE ANALYSIS			Hex - 7196	353.2	413.1	Spec	iù / }					
	SAMI LE ANALISIS		·				1 PA	11/2/18					
Sample No.	Matrix *	Sample Date	Sample Time								1	./1	
B16W79	SOIL	4/2.8/03	1358	7	1+	X	/				ļ		
	<u> </u>				 	 	-				<u> </u>	 	
	<u> </u>									+	+		
				 			-			 	+	 	
CHAIN OF POSSESSIO	N N	Sign/Prin	t Names	<u> </u>	SPE	CIAL INSTI	RUCTI	ONS 181	1/22/0	3		· · · · · ·	Matrix *
Relinquished By/Removed From	7	eccived By/Stor	ed in Da 3728 42803	ate/Time	1 22-	THE SALES HAVE VIEW	a to actua	ve a defection limit o sel range compounds		2 IOT 0.7000 1-7:	e ** I he labon	atory is to	S=Soil SE=Softment
Relinquished By/Removed From REF 14 3728	Date/Time 1100 R		red in Di	ate/Time	100 - (1)	Technetium 99; Nickel-63; Nep	Strootiu otunium-	m-89.90 - Total Sr. 1	sotopic The	orium (Thorium I	.232); Carbon	-14 ; Iodi ne-	SO=Solid SI=Skeige W = Water C=Oil A=Air
Relinquished By/Removed From SJGALE & Lal	Date/Time R	eceived By/Sto	red ju	ate/Time				•					DS=Drum Solids DL=Drum Liquids T=Tissse
Relinquished By/Removed From		eccived By Sto	90.111	ate/Time <u>よの3</u> (29:4	-							WI=Wipc L=Liquid V=Vegetation
Relinquished By/Removed From		ste/Time		ersonnel not elinquish sar	availal nples fi	ole to rom the 3728 _///			-		X=Other		
Relinquished By/Removed From	Date/Time R	eceived By/Sto	red In Da	ate/Time		Ref#_ <i>18</i> _0	<u>د_</u> n	يركاب.					
LABORATORY Received By					itle							Date/Time	
FINAL SAMPLE Disposal M DISPOSITION				Dispo	osed By					Date/Time			

FH-Central Plateau	Project	CI	IAIN OF CUST	ODY/S	AMPI	E ANAL	YSIS	REQUEST	F	03-006-63	Page 1	of <u>1</u>		
Collector Johansen/Pope/Pfister		Compa	ny Contact Iulstrom	Telephor 373-3	ne No.			Project Coordinate TRENT, SJ	or Price Code	Price Code 8N Data				
Project Designation 200-PW-2/200-PW-4 OU - Bore	chole Soil Sampling		ing Location A-37 (C4106); (17.5'-20	יי)				SAF No. F03-006	Air Quali	Air Quality		Days		
Ice Chest No. R C 96			ogbook No. -N-3361		COA 117504	ES10	· —-	Method of Shipment Federal Express						
Shipped To EBERLINE SERVICES (Form	RECKA Lity TMA) - Agr	4/22/03 Offsite	Property No.	403	02	20		Bill of Lading/Air		~— 				
POSSIBLE SAMPLE HAZAR														
		ı	Preservation	Cool 4C	Cool 40	C Cool 4C	Nor	e None			<u>.</u>			
 Special Handling and/or Sto	rage		Type of Container	aG	aG	aG	aG	30			<u> </u>			
}	 .		No. of Container(s)	1	1	1	1	_						
			Volume	120mL	60mL	120mL	60m	L 60mL	-					
			<u> </u>	Chromium Hex - 7196	NO2/NO: 353.2		See item Spec				 			
	SAMPLE ANAL	YSIS		Пасто	355.2	} ''	Instruc							
į)		1 4		,		}	}		
							1.7	· vil						
Sample No.	Matrix *	Sample Date	Sample Time	7					wa Danga		alika umalum sa			
B16W80	SOIL	4/28/03	1560	*	1 ×		/				 	 		
				ļ	+		┼─				 	 		
					 		 				 	<u> </u>		
				 	 		1							
CHAIN OF POSSESSION		Sign/Prin			SI	ECIAL INST	RUCTI	ONS we a detection limit of 5	1894 4/2	VUI	nton, is to	Matrix *		
Relinquished By/Removed From	~ <i>A</i> ~	Received By/Sto	red in D 3728 42803	ate/Time 16 45		port both keroser	e and die	sel range compounds fro	om WTPH-D analysis.	ra The labor	attry is to	S=Soil SE=Softment		
Relinquished By/Removed From	Date/Time	Received By/Sto	red In D	ate/Time		1) Technetium 00	Stronting	m-89.90 Total Sr; Iso		m-232); Carbon	-14; lodine-	SO=Solid SI=Sludge W = Water		
REF 14 3720		00 SJGALE.	Y	03 11	00 1	29: Nickel-63: Ne	panium-	- 78r	4//22/03			O=Oil A=Air		
Retinquished By/Removed From SJEALE	Date/Time 110	Received By/Sto	ivo iii	are, time	. }							DS=Drum Solids DL=Drum Liquid T=Tissue		
Relinquished By/Removed From	red In D	ate/Time		_						WI=Wipe				
	5-2-03 094 Date/Time	Received By/S/o	///\u//) 5-2	صر <u>اح کات</u>	9 43	Personnel n	ot availa	ible to				V=Vegetation X=Other		
Relinquished By/Removed From		l				Ref # 15	on _S	from the 3728						
Relinquished By/Removed From	Date/Time	Received By/Sto	red in D	ate/Time	\							<u> </u>		
LABORATORY Received By SECTION				Т	itle						Date/Time			
FINAL SAMPLE Disposal Met				Disp	osed By				Date/Time					

FH-Central	Plateau Project	SAMPLE ANALYSIS REQUEST F03-006-64 Page 1 of						of <u>1</u>					
Collector Johansen/Pope/Pfiste	r	Compa	nny Contact Hulstrom	Telepho 373-3	ne No.			Project Coordina TRENT, SJ	tor	Price Code	8N	Data Turi	
Project Designation 200-PW-2/200-PW-4	4 OU - Borehole Soil Sampling		ing Location -A-37 (C4106); (27.5'-30	<u>") </u>				SAF No. F03-006		Days			
Ice Chest No. ER	c 96 056		Logbook No. F-N-3361		COA 117504ES	310		Method of Shipm Federal Express					
Shipped To ERERLINE SERVE	RECRA CES (Formerly TMA) 951	4/22/03 Offsite	Property No.	030	22	0		Bill of Lading/A	ir Bill N	10. SEE	037		
POSSIBLE SAMPLE	E HAZARDS/REMARKS	7.7-		Į.		l .	١	- 1 X		1			
i			Preservation	Cool 4C	Cool 4C	Cool 4C	No	ne None			<u> </u>		
Special Handling a	and/or Storage	·	Type of Container	aG	вG	aG	8(
	- 6		No. of Container(s)	1	1	1	1	_ _'			<u> </u>		
			Volume	120mL	60mL	120mL	60n	nL 60mL	-				
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Spec	rial /					
	SAMPLE ANAI	YSIS		(1	1	/	7.34 45					{
							18	ill.			Ticto		
Sample No.	Matrix *	Sample Date	Sample Time		e gladini se e e e e e e e e e e e e e e e e e e				<u> </u>		18.8		
B16W81	SOIL	4/20/0	3 0745	X	1	Υ.	<u>V_</u>				BIGW	17 (u	SCF)
					<u> </u>		<u> </u>				<u> </u>		<u></u>
		 		<u> </u>	<u> </u>	<u> </u>	<u> </u>			_		 	 -
				<u> </u>	 		↓_				 		
				<u> </u>	 _				-(/0)		<u></u>	<u> </u>	Matrix *
CHAIN OF PO		Sign/Prin		ate/Time	***	CIAL INST	१ ड रठ बटोर्छ	eve a detection limit of	2/2.2 30.0 pcl	g for Carbon-14.	** The laborat	tory is to	S=Soit
Relinquished By/Renlave	1777 459 1400	RECOL	Rochiber 4	129163	1467) rep	ort both kerosen	ne and die	esel range compounds i	rom WTI	PH-D analysis.			SE-Sediment SO-Solid
Relinquished By/Removed		Received By/Sig	ored In		4 00 (1)	Technetium 99 : Nickel-63: No	, Stronde	Im-89,90 - Total Sr; I:			232), Carbon	4 ; Iodine -	SI-Shedge W = Water
Retinquished By Removed	Francisco H CA # 3	Received By/Sto	3728 4.21	ate/Time		, <u></u>		232 18/	9/2	4/47			O=Oil A=Air
IB 3728	5103 1100		Just John	5103	1105				-				DS=Dram Solids DL=Dram Liquids T=Tissue
Relinquished By/Removed SJGALL JUNE		ored in	Pate/Time									W!=Wipe &=Liquid V=Vegetation	
Refinguished By/Removed	d From Date/Time	Received By/Sto	ored in I	Date/Time		Personnel not	availa	ble to				-	X=Other
Relinquished By/Removes	5.2 c3 07/5 d From Date/Time	Received By/St		Oate/Time	, , , , , , , , , , , , , , , , , , , 	tef # [B _0	npies n n_ <u>5</u>	rom the 3728					
]	Received By				Title					<u> </u>	1	Date/Time	<u>.l</u>
	Disposal Method					Disp	osed By					Date/Time	
DISPOSITION													

FH-Central Platea	ıu Project	CI	HAIN OF CUST	TODY/S	ODY/SAMPLE ANALYSIS REQUEST F03-006-65 Page 1							of 1	
Collector Johansen/Pope/Pfister		Compa	nny Contact Hulstrom	Telephor 373-39	ne No.			Project Coordinator TRENT, SJ	Price Code	8N	Data Turi		
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling		ling Location -A-37 (C4106); (37.5'-4	0ን				SAF No. F03-006	Air Quality 45 Days				
Ice Chest No. ERC 9.6	, 055		Logbook No. F-N-3361		COA 117504E	S10		Method of Shipmen Federal Express	_				
Shipped To EBERLINE SERVICES (Fee	ZECRA 15	Offsite	e Property No.	ю30	22	2	· 	Bill of Lading/Air l	Bill No. S&&	05PC			
POSSIBLE SAMPLE HAZA					T				İ	1 1	!		
			Preservation	Cool 4C	Cool 4C	Cool 4C	No					<u></u>	
Special Handling and/or S	Storage		Type of Container	*G	aG	aG	80	/				<u> </u>	
h	÷	'	No. of Container(s)	1	1 1	1.	1	/					
	·		Volume	120mL	60mL	120mL	60n	nL 60mL			!		
		Chromium Hex - 7196	NO2/NO3 - 353,2	Oil & Grease - 413.1	See item Spec Instruc	ا / أيفتر							
			<u> </u>				У	1/1/1		TICTO:			
Sample No.	Matrix *	Sample Date	Sample Time					<u> </u>	. <u>ده مستح</u> رسهٔ <mark>ک</mark> ه در <u>ه</u> در رو	الله المستعدد المستعد	Lating with the care		
B16W82	SOIL	4/29/0	13 0900	1 ×	1	1	<u>V </u>			BILLING	8 (W	BCF)	
				 	 		 			<u> </u>	 -	-	
i 		<u> </u>			 		↓			 		 -	
	<u> </u>	 			 		├		 -		 -	 	
CHAIN OF POSSESSION	ON	Sign/Prin	nt Names		SPI	CIAL INST	RUCTI	ONS 982	4/22/03		<u> </u>	Matrix *	
Relinguished By/Removed From	Date/Time	Received By/Sto	red in Eec I	Pate/Time		The laboratory	is to achie	eve a detection limit of 50: set range compounds from	0 p⊕i/g for Carbon-14 ı WTPH-D analysis.	+ ** The laborate	ory is to	5=Soll SE=Sediment	
	101141410014			Date/Time 1	tu I			m-89,90 16tat Sr; Isoto			4- Indine-	SO=Solid St=Studge	
Relinguished By/Removed From	bls - 4-250	Received By/Sto		4.03.		; Nickel 63; Ne		237 1812	1/12/03	,,	,	W = Water O=Oil	
Relinquished By/Kemoved From	Date/Time	Received By/Sto	ored In	Date/Time								A=Air DS=Drum Solid	
1B 3728 51	03 1100	SUGALE		03 1	100							DL=Drum Liqui T=Tisse	
Relinquished By/Removed From 5 16 ALE MOL 5	Date/Time	Received By/Sto	~~~ Th#/ /		EX	Personnel no	nt availa	ible to				WI=Wipe L~Liquid	
Relinguished By/Removed From	Date/Time	Received By Sto	ored In	Date/Time	سال ب	relinquish sa	mples f	rom the 3728				V=Vegetation X=Other	
Ged Cy		145 DV	Mull 5.		2745	Ref#	თ <u>ა</u>	11 103			,		
Relinquished By/Removed From	Date/Time	Received By/Sta	ired in i	Date/Time	- (<u> </u>	
LABORATORY Received E SECTION	hy			Т	itle						ate/Time		
FINAL SAMPLE Disposal N DISPOSITION	fethod			Disposed By Date/Time									

FH-Central Platea	u Project	IAIN OF CUST	ODY/S	AMPLE	ANALY	SIS	REQUEST		F03-	006-66	Page 1 o	of 1	
Collector Johansen/Pope/Pfister		Compa	ny Contact Iulstrom	Telepho 373-3	ne No.			Project Coordina TRENT, SJ	ator	Price Code	8N	Data Turi	(
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling		ing Location A-37 (C4106); (47.5'-50)				SAF No. F03-006		Air Quality		45 D	ays
Ice Chest No. ERC 9			ogbook No. F-N-3361	COA Method of Shipme 117504ES10 Federal Express						······································			
Shipped To EBERLINE SERVICES (For	ETRA MENYTMA) The W	Offsite	Property No.	30	220			Bill of Lading/A	ir Bill	No. 500	OSPG	<u>. </u>	
POSSIBLE SAMPLE HAZA	RDS/REMARKS	, , , , , ,						1 1		1		}	
			Preservation	Cool 4C	Cool 4C	Cool 4C	Not	/					
Special Handling and/or S	torage		Type of Container	#G	aG 1	aG 1	a ^C	/					
			No. of Container(s)	1 120mL	60mL	120mL	60n				<u> </u>		}
	<u>. </u>	Volume			<u> </u>		/						
				Chromium Hex - 7196	NO2/NO3 - 353,2	Oil & Grease - 413,1	See item Spec Instruc	ad /					
	SAMPLE ANALYS	SIS		}		}	N.] [
						<u> </u>	N	W		TILTO:			
Sample No.	Matrix *	Sample Date	Sample Time					ا العام المستقد المساهد المساهد المساهد المساهد المساهد المساهد المساهد المساهد المساهد المساهد المساهد المساهد			i. Harris and sum	- sa	<u> ريسين ي</u>
B16W83	SOIL	4/24/03	1020	1	*	+	<u>/_</u>			BIGUX	9 (W	S(F)	
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	 			 	 		 				 -	 -	
				 	 	 			 ,			1	
CHAIN OF POSSESSIO)N	Sign/Prin	t Names		SPE	CIAL INSTI	RUCTI	ONS 98	je	dujes	** The labora	tom in to	Matrix *
Relinquighed By/Remdrad From	INTERPOLATION IN THE PROPERTY OF THE PROPERTY	Received By/Sto	• 1	15/1/1/3	КМ 1€00	Hie laboratory is at both kerosene	and die	ero a detection timit of sel range compounds	from W1	PH-D analysis.	** The Isoora	tory is to	S=Soil SE=Sodiment SQ=Solid
Relinquished By/Removed From	Date/Time 1 100		red in D	te/Time		Technetium-99; Nickel-63: Ner	Strontiu	m-89,90 — Total Sr; I	sotopic	horium (Thorium-	232); Carbon-	14; Iodine	SI=Sludge W = Water
Relinquished By/Removed From	16 4.2905 Deletime	Received By/Sto	red In D	49 - ate/Time	0 2 ~			7	ge	4/22/03			O=Oil A=Air DS=Drum Solids
133728 510	7 1100 Date/Time	SJGALE Received By/Sto		ate/Time	100								DL=Drum Liquids T=Tissue WI=Wipe
Relinquished By/Removed From	<u> </u>			Pe	rsonπe	not available to			•		L=Liquid V=Vegetation		
Relinquished By/Removed From		ate/Time 2-03 09	345	rei. Rei	inquist f# <i>] 2</i>	samples from the	3728	,			X=Other		
Relinquished By/Removed From	red In D	ate/Time			,-4	"- <u>-</u> - <u>-</u>	102	- 					
LABORATORY Received By SECTION	 _	7	l'itle						1	Date/Time			
FINAL SAMPLE Disposal M DISPOSITION		Disposed By Date/Time											

FH-Central Plateau Project			HAIN OF CUST	ODY/S	Y/SAMPLE ANALYSIS REQUEST F03-006-73 Page 1 of 1								of <u>1</u>
Collector Johansen/Pope/Pfister			Company Contact Telephone No. LC Hulstrom 373-3928					Project Coord TRENT, SJ		Price Code	8N	Data Tur]
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling		Sampling Location SAF No. 216-A-37 (C4106); (17.5'-20') F03-006					1		Air Quality 45 Days			Jays
Ice Chest No. ERC 9	6 056	HNI	Field Logbook No. CO. HNF-N-3361 1175					Method of Shi Federal Exp		·			
Shipped To REC	Offsite	Offsite Property No. A030220 Bill of Lading/Air Bill No. 3 SE 03 PC											
POSSIBLE SAMPLE HAZA	RDS/REMARKS]					χ				
			Preservation	Cool 4C	Cool 4C	Cool 4C	Not				<u> </u>		
Special Handling and/or S	torage		Type of Container	aG	aG	aG	a()	/	1		<u> </u>	<u> </u>	
	_		No. of Container(s)	1	1	1	1	/	<u> </u>		<u> </u>	<u> </u>	<u> </u>
			Volume	120mL	60mL	120mL	60m	ıL 60mL	}			}]
			·	Chromium Hex - 7196	NO2/NO3 353,2	- Oil & Grease - 413.1	See item Spec	#a` / (i#a			1		
	SAMPLE ANALY	YSIS				1	Instruc	ion. No 7			1	1	
				j			l Asy				1		
Sample No.	Matrix *	Sample Date	Sample Time		ili.				det e e	e de la companya de l	Market.		
B16W90	SOIL	4/28/03	1510	X	X	X					 		
				<u> </u>					-		 	 -	<u> </u>
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	<u> </u>			 -	 			- 	┼			 	
CHAIN OF POSSESSIC)N	Sign/Prin	t Names	 _	SP	ECIAL INSTR	RUCTION	ONS	982	4/22/03			Matrix *
Relinquished Dy/Removed From	Date/Time /44			ate/Time 16 4		The laboratory is port both kerosene	to cohic and die	ve a detection limi sel range compoun	is from W	CVg for Carbon-14 TPH-D analysis.	The labora	atory is to	S=Soit SE=Sediment
Relinquished By/Removed From	Date/Time	Received By/Sto		ate/Time		Technotium 99,	Strontia		· Isotopic	Thorpun (Thorium	-232); Carbon	14: Indine.	SO-Solid SI-Sludge
REF 14 3728	SOLAL 51	03 11	00 12	9; Nickel-63; Nep	tunium-	237 y Egs	4/	12/03			W = Water O=Oit A=Air		
Relinquished By/Removed From	Received By/Sto									DS=Drum Solids DL=Drum Liquids T=Tissue			
Relinquished By/Removed From	Bystored In Date/Time 5-2-03 0945							Wi=Wipe L=Liquid					
			Date/Time Demonstel not available to									V=Vegelation X=Other	
			relinquish samples from the 3728 Ref # A on 5 / / / 02										
LABORATORY Received By				Ti	itle							Date/Time	<u> </u>
SECTION												Date/Time	<u></u>
FINAL SAMPLE Disposal M DISPOSITION	ethod					Dispo	sed By					Dates 1 line	

FH-Central Plateau Project			CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST							·	F03-006-74 Page 1 or 1					
Collector Johansen/Pope/Pfister	r	Compa	Company Contact Telephone No. LC Hulstrom 373-3928						Project Coordinator TRENT, SJ		ator	Price Code 8N			Data Turnaround	
Project Designation 200-PW-2/200-PW-4	OU - Borehole Soil Sampling		Sampling Location 216-A-37 (C4106); (0.5')						SAF No. F03-006		Air Quality		45)	45 Days		
ice Chest No. ER C	- 96 056 NASIOS RECR	HNI	.ogbook No. F-N-3361		COA 117504ES10				Method of Shipment Federal Express			<u> </u>	- <u></u>			
Shipped To EBERLINE SERVICE	Property No. AO	30 Z	20	<u> う</u>			Billio	of Lading/	Air Bill l	ک <u>ي ک</u> .۰۰	E 05/	<u>ر</u>	· 			
POSSIBLE SAMPLE	E HAZARDS/REMARKS		Preservation	Cool 4C	Cool	A4C					}					
Special Handling a	ind/or Storage	:	Type of Container	aG	86	G										
Special Izanomia	ind of Otorage		No. of Container(s)	1	1	Ī										
			Volume	60mL	250	mL]			1			1	-	ł		
	SAMPLE ANAL	vsis		Pesticides - 8081	Herbic	oro- cides - 18151	i						•			
Sample No.	Matrix *	Sample Date	Sample Time													
B16W91	SOIL	4/28/03	!130	X	1)										<u> </u>	
 		<u> </u>		 	 			 -	}		}				 	
]	+			-			†				<u> </u>	
La cootter	From Date/Time 1284	Received By/Sto Received By/Sto Received By/Sto FED Received By/Sto	red in D red in D red in D red in D red in D red in D	ate/Time ate/Time ate/Time ate/Time ate/Time	5		Personnel n relinquish Ref#			the 3728				Date/Time	Matrix * S=Soli SE=Sodiment SO=Solid SU=Studge W = Water O=Otl A=Alt DS=Dram Solids DL=Dram Liquids T=Titage WI=Wipe L=Liquid V=Vegetation X=Other	
SECTION	Disposal Method						Dispo	sed By						Date/Time		
FINAL SAMPLE DISPOSITION	Colone institute															

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

chase Order/Project:

DATE: 5-2-03

F#Y SOW# / Release #: FO3-006

boratory SDG #:

03056329

TE:	ALL ENTRIES MARKED "NO" MUST BE I	EXPLAINED IN	THE COMM	ENT SECTION	 !
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	□ No	D N/A	□ see Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes	□ No	D N/A	See Comment #
3.	Airbill # recorded?	Yes	□ No	O N/A	see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	O/Ves	□ No	O N/A	☐ see Comment #
5.	Sample containers are intact?	∀ Ç/Yes	D No	D N/A	🖸 sec Comment #
6.	Custody seals on sample containers intact, signed and dated?	D'Yes	D No	DNA	D see Comment #
7.	All samples on coc received?	Yes	© №	DNA	· D see Comment #
8.	All sample label information matches coc?	D/Yes	□ No	DN/A	see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	☐ Yes	□ No	DINA	see Comment #
10.	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	Yes	□ No	□ N/A	☐ sec Comment #
11.	Where applicable, bar code labels are affixed to coc?	🛭 Yes	D No	DONIA	D see Comment #
12.	coc signed and dated?	Yes	D №	DNA	D see Comment #
13.	coc will be faxed or emailed to client?	BYes.	□ №	D N/A	D see Comment #
14.	Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	□ No	ENIA	D see Comment #

Cooler # / temp (°C) and Comments:

ELC 96.056 / 13"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dymon



DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

DATE RECEIVED: 05/02	703			•		
CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B16W79						
% SOLIDS	001	s	03L%S061	04/28/03	05/05/03	05/06/03
CHLORIDE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
CHLORIDE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
CHLORIDE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
FLUORIDE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
FLUORIDE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
FLUORIDE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
TOTAL CYANIDE	001	S	03LC046	04/28/03	05/21/03	05/21/03
TOTAL CYANIDE	001 REP	S	03LC046	04/28/03	05/21/03	05/21/03
TOTAL CYANIDE	001 MS	S	03LC046	04/28/03	05/21/03	05/21/03
PHOSPHATE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
PHOSPHATE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
PHOSPHATE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
CHROMIUM VI	001	S	03LVI041	04/28/03	05/07/03	05/07/03
CHROMIUM VI	001 MS	S	03LVI041	04/28/03	05/07/03	05/07/03
CHROMIUM VI	001 MSD	S	03LVI041	04/28/03	05/07/03	05/07/03
SULFATE BY IC	001	S	03LICA31	04/28/03	05/16/03	05/16/03
SULFATE BY IC	001 REP	S	03LICA31	04/28/03	05/16/03	05/16/03
SULFATE BY IC	001 MS	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE NITRITE	001	S	03LN3A27	04/28/03	05/22/03	05/22/03
AMMONIA	001	S	03LAMA14	04/28/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	001	S	03LOG023	04/28/03	06/04/03	06/05/03
PH	001	S	03LPH035	04/28/03	05/20/03	05/20/03
PH	001 REP	S	03LPH035	04/28/03	05/20/03	05/20/03
B16W80						
% SOLIDS	002	s	03L%S061	04/28/03	05/05/03	05/06/03
CHLORIDE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03

01

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	мтх	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
FLUORIDE BY IC	002	s	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC	002	s	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03
TOTAL CYANIDE	002	s	03LC046	04/28/03	05/21/03	05/21/03
PHOSPHATE BY IC	002	s	03LICA31	04/28/03	05/16/03	05/16/03
CHROMIUM VI	002	S	03LVI041	04/28/03	05/07/03	05/07/03
SULFATE BY IC	002	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE NITRITE	002	s	03LN3A27	04/28/03	05/22/03	05/22/03
AMMONIA	002	s	03LAMA14	04/28/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	002	S	03LOG023	04/28/03	06/04/03	06/05/03
PH	002	S	03LPH035	04/28/03	05/20/03	05/20/03
B16W81						
% SOLIDS	003	s	03L%S061	04/29/03	05/05/03	05/06/03
CHLORIDE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
FLUORIDE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRITE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
TOTAL CYANIDE	003	S	03LC046	04/29/03	05/21/03	05/21/03
PHOSPHATE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
CHROMIUM VI	003	S	03LVI041	04/29/03	05/07/03	05/07/03
SULFATE BY IC	003	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE NITRITE	003	S	03LN3A27	04/29/03	05/22/03	05/22/03
NITRATE NITRITE	003 REP	S	03LN3A27	04/29/03	05/22/03	05/22/03
NITRATE NITRITE	003 MS	S	03LN3A27	04/29/03	05/22/03	05/22/03
AMMONIA	003	S	03LAMA14	04/29/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	003	S	03LOG023	04/29/03	06/04/03	06/05/03
PH	003	S	03LPH035	04/29/03	05/20/03	05/20/03
B16W82						
% SOLIDS	004	s	03L%S061	04/29/03	05/05/03	05/06/03
CHLORIDE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
FLUORIDE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRITE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
TOTAL CYANIDE	004	S	03LC046	04/29/03	05/21/03	05/21/03

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
PHOSPHATE BY IC	004	s	03LICA31	04/29/03	05/16/03	05/16/03
CHROMIUM VI	004	S	03LVI041	04/29/03	05/07/03	05/07/03
SULFATE BY IC	004	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE NITRITE	004	S	03LN3A27	04/29/03	05/22/03	05/22/03
AMMONIA	004	S S	03LAMA14	04/29/03 04/29/03	05/24/03 06/04/03	05/26/03
OIL & GREASE BY GRAV PH	004 004	S	03LOG023 03LPH035	04/29/03	05/20/03	06/05/03 05/20/03
B16W83						
% SOLIDS	005	S	03L%S061	04/29/03	05/05/03	05/06/03
CHLORIDE BY IC	005	S	03LICA31	04/29/03	05/16/03	05/16/03
FLUORIDE BY IC	005	S	03LICA31	04/29/03	05/16/03	05/16/03
NITRITE BY IC	005	S	03LICA31 03LICA31	04/29/03 04/29/03	05/16/03 05/16/03	05/16/03 05/16/03
NITRATE BY IC TOTAL CYANIDE	005 005	S S	03LC046	04/29/03	05/16/03	05/16/03
PHOSPHATE BY IC	005	S	03LC040	04/29/03	05/16/03	05/16/03
CHROMIUM VI	005	S	03LVI041	04/29/03	05/07/03	05/10/03
SULFATE BY IC	005	s	03LICA31	04/29/03	05/16/03	05/16/03
NITRATE NITRITE	005	Š	03LN3A27	04/29/03	05/22/03	05/22/03
AMMONIA	005	S	03LAMA14	04/29/03	05/24/03	05/26/03
OIL & GREASE BY GRAV	005	S	03LOG023	04/29/03	06/04/03	06/05/03
PH	005	S	03LPH035	04/29/03	05/20/03	05/20/03
B16W90						
% SOLIDS	006	S	03L%S061	04/28/03	05/05/03	05/06/03
CHLORIDE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
FLUORIDE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRITE BY IC NITRATE BY IC	006 006	s s	03LICA31 03LICA31	04/28/03 04/28/03	05/16/03 05/16/03	05/16/03 05/16/03
TOTAL CYANIDE	006	S	03LC046	04/28/03	05/21/03	05/21/03
PHOSPHATE BY IC	006	S	03LCA31	04/28/03	05/16/03	05/16/03
CHROMIUM VI	006	S	03LVI041	04/28/03	05/07/03	05/07/03
SULFATE BY IC	006	S	03LICA31	04/28/03	05/16/03	05/16/03
NITRATE NITRITE	006	Š	03LN3A27	04/28/03	05/22/03	05/22/03
AMMONIA	006	S	03LAMA14	04/28/03	05/24/03	05/26/03
AMMONIA	006 REP	S	03LAMA14	04/28/03	05/24/03	05/26/03

DATE RECEIVED: 05/02/03 LVL LOT # :0305L329 CLIENT ID /ANALYSIS LVL # MTX PREP # COLLECTION EXTR/PREP ANALYSIS 006 MS 03LAMA14 04/28/03 05/24/03 05/26/03 AMMONIA S OIL & GREASE BY GRAV 006 S 03LOG024 04/28/03 06/05/03 06/06/03 006 REP S 03LOG024 04/28/03 OIL AND GREASE BY GR 06/05/03 06/06/03 OIL AND GREASE BY GR 006 MS S 03LOG024 04/28/03 06/05/03 06/06/03 006 03LPH035 04/28/03 05/20/03 05/20/03 PH B16W91 % SOLIDS 007 03L%S061 04/28/03 05/05/03 05/06/03 % SOLIDS 007 REP S 03L%S061 04/28/03 05/05/03 05/06/03 LAB QC: CHLORIDE BY IC MB1 03LICA31 N/A 05/16/03 05/16/03 CHLORIDE BY IC MB1 BS S 03LICA31 N/A 05/16/03 05/16/03 FLUORIDE BY IC S 03LICA31 N/A 05/16/03 05/16/03 MB1 FLUORIDE BY IC s N/A 05/16/03 05/16/03 MB1 BS 03LICA31 NITRITE BY IC N/A 05/16/03 05/16/03 MB1 S 03LICA31 NITRITE BY IC MB1 BS S 03LICA31 N/A 05/16/03 05/16/03 NITRATE BY IC MB1 S 03LICA31 N/A 05/16/03 05/16/03 NITRATE BY IC MB1 BS S 03LICA31 N/A 05/16/03 05/16/03 TOTAL CYANIDE LCS L S 03LC046 N/A 05/21/03 05/21/03 TOTAL CYANIDE 05/21/03 LCS L S 03LC046 N/A 05/21/03 TOTAL CYANIDE N/A MB1 S 03LC046 05/21/03 05/21/03 PHOSPHATE BY IC MB1 S 03LICA31 N/A 05/16/03 05/16/03 N/A 05/16/03 PHOSPHATE BY IC MB1 BS S 03LICA31 05/16/03 CHROMIUM VI 03LVI041 N/A 05/07/03 05/07/03 MB1 CHROMIUM VI MB1 BS S 03LVI041 N/A 05/07/03 05/07/03 CHROMIUM VI N/A MB1 BSD S 03LVI041 05/07/03 05/07/03 SULFATE BY IC N/A MB1 03LICA31 05/16/03 05/16/03 SULFATE BY IC MB1 BS 03LICA31 N/A 05/16/03 05/16/03 N/A 05/22/03 05/22/03 NITRATE NITRITE MB1 S 03LN3A27 NITRATE NITRITE 03LN3A27 N/A 05/22/03 05/22/03 MB1 BS S AMMONIA MB1 03LAMA14 N/A 05/24/03 05/26/03 S AMMONIA MB1 BS S 03LAMA14 N/A 05/24/03 05/26/03 AMMONIA MB1 BSD S 03LAMA14 N/A 05/24/03 05/26/03 OIL & GREASE BY GRAV MB1 S 03LOG023 N/A 06/04/03 06/05/03

S 03LOG023

06/04/03

N/A

06/05/03

OIL AND GREASE BY GR MB1 BS

DATE RECEIVED: 05/02/03

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
		- —			*:	
OIL AND GREASE BY GR	MB1 BSD	s	03LOG023	N/A	06/04/03	06/05/03
OIL & GREASE BY GRAV	MB1	S	03LOG024	N/A	06/05/03	06/06/03
OIL AND GREASE BY GR	MB1 BS	S	03LOG024	N/A	06/05/03	06/06/03
OIL AND GREASE BY GR	MB1 BSD	s	03LOG024	N/A	06/05/03	06/06/03



Analytical Report

Client: TNU-HANFORD F03-006 H2194

W.O.#: 11343-606-001-9999-00

LVL#: 0305L329

Date Received: 05-02-03

INORGANIC NARRATIVE

1. This narrative covers the analyses of 7 soil samples.

- 2. The samples were prepared and analyzed in accordance with the methods indicated on the attached glossary.
- 3. The sample holding times as required by the method and/or contract were met with the exception of Total Cyanide samples as the request for analyses was past the sample holding times.
- 4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
- 5. The method blanks were within the method criteria.
- 6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS for Ammonia and Oil and Grease were within the 20% Relative Percent Difference (RPD) control limit.
- 7. The matrix spike (MS) recoveries for Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Chromium VI, Sulfate, Nitrate Nitrite, Ammonia and Oil and Grease were within the 75-125% control limits, however MS recovery for Phosphate was below the control limits at 71.5%.
- 8. The replicate analyses for Chloride, Fluoride, Nitrite, Nitrate, Total Cyanide, Phosphate, Sulfate, pH, Nitrate Nitrite, Ammonia, Oil and Grease and Percent Solids were within the 20% Relative Percent Difference (RPD) control limit.

- Results for solid samples are reported on a dry weight basis. 9.
- 10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Iain Daniels

Laboratory Manager Lionville Laboratory Incorporated

njp\i05-329



Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

	<u>ASTM</u>	SW846	OTHER
% Ash	D2216-80		
% Moisture	D2216-80		ILMO4.0 (e)
% Solids	D2216-80		ILMO4.0 (e)
% Volatile Solids	D2216-80		_
ASTM Extraction in Water	D3987-81/85		
BTU	 D240-87		
CEC		9081	c ·
Chromium VI		3060A/7196A	_
Corrosivity by coupon by pH		1110(mod) 9045C	
Cyanide, Total		V9010B/9014	ILMO4.0 (e)
Cyanide, Reactive		Section 7.3/9014	
Halides, Extractable Organic		9020B	EPA 600/4/84-008
Halides, Total		9020B	EPA 600/4/84-008
EP Toxicity		1310A	
Flash Point		1010	
Ignitability		1010	,
Oil & Grease		√ 9071A	₹ 413.1 (mod.)
Carbon, Total Organic		9060	Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	D240-87(mod)	5050	_
Petroleum Hydrocarbons, Total Rec	coverable	· 9071	EPA 418.1
pH, Soil		✓ 9045C	
Sulfide, Reactive		Section 7.3/9030B	
Sulfide		9030B(mod)	
Specific Gravity	D1429-76C/	D5057-90	
Sulfur, Total		9056	
Synthetic Preparation Leach		1312	
Paint Filter		9095A	
Other: Charide Ferende Ad	Method:	EPA 300.0 (med.)	
Other: Mitrate Prospheto, &	Wats Method		
Mitrate Mitrite	0 -	EPA 353.2 (med.)	
ammonia	•	EPA 350 3	

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LC = Laboratory Control Sample.

NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

ANALYTICAL WET CHEMISTRY METHODS

- 1. ASTM Standard Methods.
- 2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
- 3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
- a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
- b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
- c. <u>Method of Soil Analysis</u>, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
- d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
- e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
- f. Code of Federal Regulations.

INORGANICS DATA SUMMARY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194 WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
	#2555555555555555555555555555555555555				~~~~~~	
-001	B16W79	% Solids	93.9		0.01	1.0
		Chloride by IC	14.3	MG/KG	1.3	1.0
		Fluoride by IC	1.3 u	MG/KG	1.3	1.0
		Nitrite by IC	1.33 u	MG/KG	1.33	1.0
		Nitrate by IC	1710	MG/KG	133	100
		Cyanide, Total	0.40 u	MG/KG	0.40	1.0
		Phosphate by IC	1.3 u	MG/KG	1.3	1.0
		Chromium VI	0.43 u	MG/KG	0.43	1.0
		Sulfate by IC	32.0	MG/KG	1.3	1.0
		Nitrate Nitrite	489	MG/KG	20.0	100
		Ammonia, as N	266	MG/KG	4.2	1.0
		Oil & Grease Gravimetri	710 u	MG/KG	710	1.0
		рH	7.5	SOIL PH	0.01	1.0
-002	B16W80	* Solids	95.7	•	0.01	1.0
		Chloride by IC	1.3 u	MG/KG	1.3	1.0
		Fluoride by IC	1.3 u	MG/KG	1.3	1.0
		Nitrite by IC	1.31 u	MG/KG	1.31	1.0
		Nitrate by IC	718	MG/KG	65.3	50.0
		Cyanide, Total	0.32 u	MG/KG	0.32	1.0
		Phosphate by IC	1.3 u	MG/KG	1.3	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
		Sulfate by IC	1.7	MG/KG	1.3	1.0
		Nitrate Nitrite	163	MG/KG	10.3	50.0
		Ammonia, as N	9.0	MG/KG	4.6	1.0
		Oil & Grease Gravimetri	696 u	MG/KG	696	1.0
		Ha	7.9	SOIL PH	0.01	1.0

INORGANICS DATA SUMMARY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194 WORK ORDER: 11343-606-001-9999-00

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
****				=====	******	
-003	B16W81	* Solids	96.0	•	0.01	1.0
		Chloride by IC	1.3 u	MG/KG	1.3	1.0
		Fluoride by IC	1.3 u	MG/KG	1.3	1.0
		Nitrite by IC	1.30 u	MG/KG	1.30	1.0
		Nitrate by IC	18.4	MG/KG	1.30	1.0
		Cyanide, Total	0.31 u	MG/KG	0.31	1.0
		Phosphate by IC	1.3 u	MG/KG	1.3	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
		Sulfate by IC	1.8	MG/KG	1.3	1.0
		Nitrate Nitrite	5.1	MG/KG	0.19	1.0
		Ammonia, as N	5.2 u	MG/KG	5.2	1.0
		Oil & Grease Gravimetri	694 u	MG/KG	694	1.0
		рн	8.6	SOIL PH	0.01	1.0
~004	B16W82	* Solids	94.4		0.01	1.0
		Chloride by IC	1.3 u	MG/KG	1.3	1.0
		Fluoride by IC	1.3 u	MG/KG	1.3	1.0
		Nitrite by IC	1.32 u	MG/KG	1.32	1.0
		Nitrate by IC	48.0	MG/KG	1.32	1.0
		Cyanide, Total	0.32 u	MG/KG	0.32	1.0
		Phosphate by IC	1.3 u	MG/KG	1.3	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
		Sulfate by IC	2.1	MG/KG	1.3	1.0
		Nitrate Nitrite	10.5	MG/KG	0.42	2.0
		Ammonia, as N	44.2	MG/KG	4.3	1.0
		Oil & Grease Gravimetri	706 u	MG/KG	706	1.0
		Нд	B.5	SOIL PH	0.01	1.0

INORGANICS DATA SUMMARY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194 WORK ORDER: 11343-606-001-9999-00

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
*=====		**************				
-005	B16W83	% Solids	94.7	*	0.01	1.0
		Chloride by IC	1.3 u	MG/KG	1.3	1.0
		Fluoride by IC	1.3 u	MG/KG	1.3	1.0
		Nitrite by IC	1.32 u	MG/KG	1.32	1.0
		Nitrate by IC	51.2	MG/KG	2,64	2.0
		Cyanide, Total	0.38 u	MG/KG	0.38	1.0
		Phosphate by IC	1.3 u	MG/KG	1.3	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
		Sulfate by IC	2.1	MG/KG	1.3	1.0
		Nitrate Nitrite	13.4	MG/KG	0.42	2.0
		Ammonia, as N	4.3 u	MG/KG	4.3	1.0
		Oil & Grease Gravimetri	704 u	MG/KG	704	1.0
		рН	8.5	SOIL PH	0.01	1.0
-006	B16W90	* Solids	96.1	•	0.01	1.0
		Chloride by IC	1.3 u	MG/KG	1.3	1.0
		Fluoride by IC	1.3 u	MG/KG	1.3	1.0
		Nitrite by IC	1.30 u	MG/KG	1.30	1.0
		Nitrate by IC	522	MG/KG	26.0	20.0
		Cyanide, Total	0.33 u	MG/KG	0.33	1.0
		Phosphate by IC	1.3 u	MG/KG	1.3	1.0
		Chromium VI	0.42 u	MG/KG	0.42	1.0
		Sulfate by IC	1.6	MG/KG	1.3	1.0
		Nitrate Nitrite	143	MG/KG	3.7	20.0
		Ammonia, as N	4.7 u	MG/KG	4.7	1.0
		Oil & Grease Gravimetri	694 u	MG/KG	694	1.0
		pН	8.0	SOIL PH	0.01	1.0

INORGANICS DATA SUMMARY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
		*********			=========	
-007	B16W91	* Solids	92.4	*	0.01	1.0

INORGANICS METHOD BLANK DATA SUMMARY PAGE 06/06/03

CLIENT: TNUHANFORD F03-006 H2194

WORK	ORDER:	11343-606-001-9999-00	

10.00					REPORTING	DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT	FACTOR
******	***************				=====	
BLANK10	03LICA31-MB1	Chloride by IC	1.2 u	MG/KG	1.2	1.0
		Fluoride by IC	1.2 u	MG/KG	1.2	1.0
		Nitrite by IC	1.25 u	MG/KG	1.25	1.0
		Nitrate by IC	1.25 u	MG/KG	1.25	1.0
		Phosphate by IC	1.2 u	MG/KG	1.2	1.0
		Sulfate by IC	1.2 u	MG/KG	1.2	1.0
BLANK1	03LC046-MB1	Cyanide, Total	0.50 u	мс/кс	0.50	1.0
BLANK10	03LV1041-MB1	Chromium VI	0.40 u	MG/KG	0.40	1.0
BLANK10	03LN3A27-MB1	Nitrate Nitrite	0.20 u	MG/KG	0.20	1.0
BLANK10	03LAMA14-MB1	Ammonia, as N	5.0 u	MG/KG	5.0	1.0
BLANK10	03LOG023-MB1	Oil & Grease Gravimetri	667 u	MG/KG	667	1.0
BLANK10	03LOG024-MB1	Oil & Grease Gravimetri	667 u	MG/KG	667	1.0

INORGANICS ACCURACY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194 WORK ORDER: 11343-606-001-9999-00

			SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	Sample	RESULT	AMOUNT	*RECOV	factor (SPK)

-001	B16W79	Chloride by IC	41.6	14.3	27.0	100.9	1.0
		Fluoride by IC	26.1	0.45	27.0	94.8	1.0
		Nitrite by IC	27.2	1.33u	27.0	100.6	1.0
		Nitrate by IC	7010	1710	5320	99.5	200
	•	Cyanide, Total	5.03	0.40u	5.30	95.0	1.0
		Phosphate by IC	19.3	1.3 u	27.0	71.5	1.0
		Soluble Chromium VI	4.5	0.43u	4.3	104.8	1.0
		Insoluble Chromium VI	1280	0,43u	1190	108.3	100
		Sulfate by IC	74.5	32.0	53.0	80.2	2.0
-003	B16W81	Nitrate Nitrite	10.9	5.1	5.1	114.1	2.0

INORGANICS ACCURACY REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194 WORK ORDER: 11343-606-001-9999-00

			SPIKED	INITIAL	SPIKED		DILUTION
SAMPLE	SITE ID	ANALYTE	SAMPLE	RESULT	AMOUNT	*RECOV	factor (spk)
*****	************	************					******
-006	B16W90	Ammonia, as N	213	4.7 u	202	105.0	1.0
		Oil & Grease Gravimetr	6450	694 u	6980	92.4	1.0
BLANK10	03LICA31-MB1	Chloride by IC	23.6	1.2 u	25.0	94.3	1.0
		Fluoride by IC	23.9	1.2 u	25.0	95.4	1.0
		Nitrite by IC	24.3	1.25u	25.0	97.1	1.0
		Nitrate by IC	24.4	1.25u	25.0	97.4	1.0
		Phosphate by IC	23.7	1.2 u	25.0	94.8	1.0
		Sulfate by IC	24.2	1.2 u	25.0	96.6	1.0
BLANK10	03LVI041-MB1	Soluble Chromium VI	3.9	0.40u	4.0	96.6	1.0
		Insoluble Chromium VI	1220	0.40u	1250	97.8	100
BLANK10	03LN3A27-MB1	Nitrate Nitrite	5.2	0.20u	5.0	104.0	1.0
BLANK10	Q3LAMA14-MB1	Ammonia, as N	196	5.0 u	200	98.0	1.0
		Ammonia, as N MSD	192	5.0 u	200	96.0	1.0
BLANK10	03L0G023-MB1	Oil & Grease Gravimetr	6430	667 u	6350	101.3	1.0
		Oil & Grease - Grav M	7230	667 u	6350	113.9	1.0
BLANK10	03L0G024-MB1	Oil & Grease Gravimetr	6160	667 u	6710	91.8	1.0
		Oil & Greage - Grav M	6270	667 u	6710	93.4	1.0

INORGANICS DUPLICATE SPIKE REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

		and the second s			
			SPIKE#1	SPIKB#2	2
SAMPLE	SITE ID	ANALYTE	*RECOV	*RECOV	*DIFF
	*========				
BLANK10	03LAMA14-MB1	Ammonia, as N	98.0	96.0	2.1
BLANK10	03LOG023-MB1	Oil & Grease - Grav	101.3	113.9	11.7
BLANK10	03LOG024-MB1	Oil & Grease - Grav	91.B	93.4	1.7

INORGANICS PRECISION REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

			INITIAL			DILUTION
SAMPLE	SITE ID	ANALYTE	result	REPLICATE	RPD	FACTOR (REP)
	,				======	
-001REP	B16W79	Chloride by IC	14.3	14.0	2.5	1.0
		Fluoride by IC	1.3 u	1.3 u	NC	1.0
		Nitrite by IC	1.33u	1.33u	NC	1.0
		Nitrate by IC	1710	1750	2.0	100
		Cyanide, Total	0.40u	0.52u	NC	1.0
		Phosphate by IC	1.3 u	1.3 u	NC	1.0
		Sulfate by IC	32.0	32.5	1.6	1.0
		На	7.5	7.5	0.9	1.0
-003REP	B16W81	Nitrate Nitrite	5.1	5.2	3.6	1.0

INORGANICS PRECISION REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

			INITIAL			DILUTION
SAMPLE	SITE ID	ANALYTE	RESULT	REPLICATE	RPD	factor (Rep)
*******	*************	RT23 # A & T 2 B F 7 B F 7 W A Z E 7 F 7 F	======			2222224462
-006RBP	B16W90	Ammonia, as N	4.7 u	5.2 u	NC	1.0
		Oil & Grease Gravimetri	694 u	694 u	NC	1.0
-007RBP	B16W91	* Solids	92.4	92.8	0.48	1.0

INORGANICS LABORATORY CONTROL STANDARDS REPORT 06/06/03

CLIENT: TNUHANFORD F03-006 H2194

LVL LOT #: 0305L329

			SPIKED	SPIKED			
SAMPLE	SITE ID	ANALYTE	SAMPLE	AMOUNT	UNITS	*RECOV	
	*********	*********			**====		
LCSS1	03LC046-LCS1	Cyanide, Total LCS	1.84	2.0	MG/KG	91.8	
LCSS2	03LC046-LCS2	Cyanide, Total LCS	9.91	10.0	MG/KG	99.1	

Custody Transfer Record/Lab Work Request Page 1 of 1

Q305L	329
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FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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_		LIONVILLE LABORATORY INC.	

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Lionville Labo	oratory	Project Manager OS				Solid		ļ	10	250						യ	CO.	190			_
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		6-16-03		ANALY			₩		ANIC ⊋ m	٩		1	İ					1	•		
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MATRIX			Matrix							 		Lionv	lle La	porato	ry Us	e Only		Ţ			\Box
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S - Soil SE - Sediment	ID.	Client ID/Description	(V)	Matrix	Collected	Collected]	80	DH.G	}					ICRO	Ω Q	TOGGR	,]		
SO - Solid SL - Sludge			MS MSD						8	à						ļĔ.	Н	H		$-\!$	_
W - Water	COL	Brown		S	5085 N	13560											<u>~</u>				
A - Air DS - Drum	900	1 80			1	1510														,	
Solids DL - Drum	203	81			4-27-03											'					[
Liquids	224	88			1	ОРО										_					
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F - Fish	200	1 91		11	1	1130		1		1											\neg
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			DATE	REVISIO	NS:	<u> </u>	Ь			<u> </u>	<u> </u>		<u>. </u>	┢		Lionvi	He Lab	oratory	Use Onl		=
Special instruc	uons:	THE IT DIMY CAL	_\$-	14-03	1. <u>fu</u>	Clast:	9"	e De	<u> </u>	6-16	- 03			- -	amples	were:/			nper Resist		vas:
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FH-Central Pl	lateau Project	CI	HAIN OF CUST	ODY/S	AMPLI	E ANAL'	YSIS	REQUEST	•]	F0	3-006-62	Page]	of 1
Collector Johansen/Pope/Pfister			ny Contact Hulstrom	Telepho 373-3				Project Coordin TRENT, SJ	ator	Price Code	8N		rnaround
Project Designation 200-PW-2/200-PW-4 O	OU - Borehole Soil Sampling	Sampl 216	ing Location -A-37 (C4106); (12.5'-15	 1 7)				SAF No. F03-006		Air Quality		45	Days
Ice Chest No. ER C	- 96 056	Field I	ogbook No. F-N-3361		COA 117504ES	10		Method of Ship Federal Expre		•			
Shipped To EDERLINE SERVICE	RETRIA SE(Formerly TMA) AGR 41	22/a3 Offsite	Property No.	30	22	0		Bill of Lading/	Air Bill N	45E	OSPO	_	"
POSSIBLE SAMPLE H			·		T								
			Preservation	Cool 4C	Cnol 4C	Cool 4C	Non						
 Special Handling and	d/or Storage	:	Type of Container	aG	aG	aG	aG	/					
	_		No. of Container(s)	1	1 (0-1	120-7	1						ļ
			Volume	120mL	60mL	120mL	60m						
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413,1	See item Speci Instruct	<u>al</u> /					
	SAMPLE ANALY	(SIS					LAY.			-			
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Sample No.	Matrix *	Sample Date	Sample Time			<u>., , , , , , , , , , , , , , , , , , , </u>		<u> </u>		<u> </u>			
B16W79	SOIL	4/7.8/03	1358	1	+	<u> </u>	<u> </u>			 	↓	<u> </u>	
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CHAIN OF POSSE		Sign/Prin			SPE	CIAL INSTR	UCTIO		1/24		44.775 - 1-1	* A	Matrix *
Relinquished By/Removed Fro	// // /*	Received By/Stor	ed in 3728 42803	1645				ve a defection limit of sel range compounds			The laborati	ory is to	S=Soil SE=Sediment SO=Solid
Relinquished By/Removed Fro	om Date/Time	Received By/Stor		te/Time	-(1)-	Coloctium 99;	Strontium	n-89.90 - Total Sr; I	sotopic Th	orium (Thorium	23 2); Cerbon 1	4 ; ledi ne-	SI-Studge W = Water
REF IA 37	728 3 103	127 646			00 129,	Nickel-65, Nep	Runium-Z	of Age y	/22 /o	1	•		0-08
Relinquished By/Removed Fro	om Date/Time	Received By/Stor	~~ <i>p</i> ,	tc/Time	ł			•	•				A=Air DS=Drum Solids
SJGALE & A			EX	nte/Time							•		DL=Drum Liquids T=Tissue
Relinquisted By/Removed Fro	Om Date/Time 5.1.03.0945		Much 3:	203 C	1941	-							Wi=Wipe L=Liquid V=Vegetation
Relinquished By/Removed Fro	om Date/Time	Received By/Stor	d in Da	ite/Time		ersonnel not linquish san	availab nples fr	om the 3728					X-Other
Relinquished By/Removed Fro	om Date/Time	Received By/Stor	ed in Da	te/Time	F	.ef#_ <i></i> 0	n _&_					•	
LABORATORY Received	rived By			Ti	tle						D	ate/Time	
	oosal Method					Dispo	sed By				I	Date/Time	

FH-Central Platea	u Project	CI	IAIN OF CUST	ODY/S	AMPLI	EANAL	YSIS	REQUEST	F0	3-006-63	Page 1	of 1
Collector Johansen/Pope/Pfister			ny Contact Iulstrom	Telepho 373-3				Project Coordinate TRENT, SJ	Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling		ing Location -A-37 (C4106); (17.5'-20	0)				SAF No. F03-006	Air Quality		45 J	Days
Ice Chest No R C 9			ogbook No. F-N-3361		COA 117504E	S10		Method of Shipmer Federal Express			· ·	
Shipped To EBERLINE SERVICES (For	RECKA menty TMA) ASV 4/2	2/03 Offsite	Property No.	403	02	20		Bill of Lading/Air	Bill No. 508	- 03PC	<u>. </u>	
POSSIBLE SAMPLE HAZA				0-140	0-146	Coul 4C) No.					
			Preservation	Cool 4C	Cool 4C	Çool 4C	Non	-				
 Special Handling and/or S	torage		Type of Container	aG	aG	aG	aG	20				
- F	,		No. of Container(s)	1	1	1	1	/1				
			Volume	120mL	60mL	120mL	60m	L 60mL				!
	SAMPLE ANALYS	sis		Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instruct	ĕ /{				
							A)	41 ³¹				
Sample No.	Matrix *	Sample Date	Sample Time		1				· · · · · · · · · · · · · · · · · · ·			
B16W80	SOIL	4/28/03	1500	*	<u> </u>	LX_	/_					
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CHAIN OF POSSESSIO	N	Sign/Print	Names	<u> </u>	SPE	CIAL INSTI	RUCTIO	ONS	180 4/22/	. <u></u>		Matrix *
Relinquished By/Removed From	Date/Time /645	Received By/Stor	ed in Di 3728 42803	ate/Time 16 45				 a detection limit of 50 el range compounds fron 		- ** The laborato	ry is to	S=Soit SE=Soitme=
Relinquished By/Removed From	Date/Time	Received By/Stor	ed In . Da	ate/Time	 ++}-			n-89.90 — Total Sr; Iseto		232); Carbon-14	; lodine-	SO=Solid SI=Shadge
REF 14 3728		SJGALE.	/ ***	03 110 ate/Time	00 158	Nickel-63: Ner	xumium-2	37 ggr	2//22/03			W = Water O=Oll A=Alr
Relinquished By/Removed From SJEALE	Date/Time 1100	Received By/Stor	CO III	area 1 mile							i	DS=Drum Solids DL=Drum Liquids
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Relinquished By/Removed From	5 · 2 · 0.3 0945 Date/Time	Received By/Stor	ed in D	ate/Time	L L	Personnel no relinquish sa		ble to rom the 3728				V=Vegetation X=Other
Relinquished By/Removed From	Date/Time	Received By/Stor	ed in D	ate/Time	_	Ref # <u>/ P</u>	on <u>5</u>	11/03				
LABORATORY Received By	y	<u>L</u>		Ti	itle			<u> </u>		Da	ate/Time	L
SECTION FINAL SAMPLE Disposal M DISPOSITION	ethod	······································	 _			Dispo	sed By			D	ate/Time	

FH-Central Plates	au Project	CI	HAIN OF CUST	ODY/S	SAMPLE	ANAL	YSIS	REQ	UEST		F03-006-64	Page 1	of 1
Collector Johansen/Pope/Pfister			iny Contact Hulstrom	Telepho 373-3				Project TRENT	Coordinator , SJ	Price Cod	de 8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - B	Sorehole Soil Sampling	Sampl 216	ing Location -A-37 (C4106); (27.5'-30	ን				SAF No F03-006		Air Qua	lity 🗌	45 1	Days
Ice Chest No. ER C	96 056	HN	Logbook No. F-N-3361		COA 117504ES	10		Feder	of Shipmen ral Express			·	
Shipped To EBERLINE SERVICES (Fo	RECORA	Offsite	Property No.	030	122	9		Bill of	Lading/Air l	Bill No. Sc	TE OSP		
POSSIBLE SAMPLE HAZA		7445		T	T								
			Preservation	Cool 4C	Cool 4C	Cool 4C	Nor	*	None				
Special Handling and/or S	Storage	•	Type of Container	aG	aG	a-G	aC		1 6		.		
•	J		No. of Container(s)	1	1	1	<u> </u>		1				
]			Volume	120mŁ	60mL	120mL	60m	т /	60mL				
				Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item Spec Instruc	الأها	itium - H3				
	SAMPLE ANALY	YSIS					. V	7	1				
				1			187	N.			TILTO		
Sample No.	Matrix *	Sample Date	Sample Time										
B16W81	SOIL	4/29/03	0 745	*	1	Κ.	V_{\perp}				Bluw	11 (h	SCF)
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CHAIN OF POSSESSION	DN	Sign/Prin	t Names	<u> </u>	SPE	LIAL INSTI	PHCTI	ONS	180 9	1/22/03		<u> </u>	Matrix *
Relinquished By/Rengved From	Date/Time	Received By/Sto		ate/Time	** T	he laboratory t	s to achie	ve a d ctec	tion limit of 50.	V PCI/g for Carbo WTPH-D analys	m=1中: ** The laborat is.	ory is to	S=Soil
Relinquished By/Removed From	Date/Time 1400	Received BV/Sio	Rochiber 4	29 (3)	<u> 1002</u>			_	•	•	rium-232), Carbon I	4: Iodine-	SE=Sediment SO=Solid SI=Studge
Recog R.f. L				-03	129;	Nickel-63: Ne	ptunium-		Se 4		-,,	,	W = Water O=Oil
Relinquished By Removed From	O 3 1/00	Received By/Sto	red in	nte/Time 5 /03	1105			•	•	•		•	A=Air DS=Drum Solids DL=Drum Liquids
Relinquished By/Removed From SIGALISMUL 5	Date/Time	Received By/Sto	ice in	ate/Time					•	•			T=Tissue WI=Wipe L-Liquid V=Vegetation
Relinquished By/Removed From	Date/Time 5-2-03 0945	Received By/Sto	red In Da	ate/Time - 03. 08/	v re	ersonnel not linquish sam	miec fr	am the T	728				X=Other
Relinquished By/Removed From	Date/Time	Received By/Sto	red in D	ate/Time	Re	f# /B _or	<u>.5</u>	//_	2				
LABORATORY Received E SECTION	Зу	<u> I </u>		1	itle						T	Pate/Time	
FINAL SAMPLE Disposal M DISPOSITION	Aethod					Dispo	osed By				1	Date/Time	

FH-Central	AMPL	E ANAL	YSIS	REQUES	$\overline{\mathbf{T}}$	F0	3-006-65	Page 1	of <u>1</u>						
Collector Johansen/Pope/Pfis	ster		Com	pany Cont Hulstrom	act	Telephor 373-39	e No.			Project Coord TRENT, SJ		Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW	/-4 OU - Bore	hole Soil Sampling		pling Loca 6-A-37 (C	ition (4106); (37.5'-40	"				SAF No. F03-006		Air Quality	y 🗆	45 1	Days
Ice Chest No. ER	C 9.6	056		Logbook NF-N-336			COA 117504	ES10		Method of Shi Federal Exp	ress	· 	·		
Shipped To EDERLINE SERV	Re	ECRA 1	offs	ite Proper	ty No. A	030	22	0		Bill of Lading	/Air Bill	No. 55%	05/0	, 	<u></u>
POSSIBLE SAMPI	LE HAZARI	S/REMARKS "	7-7-	-			i -				X		l	1	1
				Pr	eservation	Cool 4C	Cool 40		No	/_					
Special Handling	and/or Sto	rage		Туре	of Container	aG	aG 1	aG 1	aC	/	 		<u> </u>		
		:		 	Container(s)	120mL	60mL		60m	/	+		 		
<u> </u>	· 	·	,	<u> </u>	Volume	Chromauz	NO2/NO3	- Oil & Grease -	See item	(1) ig/ Tritium - H3	-		<u> </u>		
		SAMPLE ANA	LYSIS			Hex - 7196	353,2	413.1	Spec						
		·							l y				Tieto:		
Sample No		Matrix *	Sample Date	<u> </u>	Sample Time						<u> </u>		Inc.io.		
B16W82	<u> </u>	SOIL	11/	63	0900	X	1	1	7				BIGW	18 (W	SCF)
			<u> </u>				<u> </u>		├ ─		 				
					· — —		-		-		╁──				 -
CHAIN OF PO	OSSESSION		Sign/Pr	int Names	<u> </u>		SP	ECIAL INSTI	RUCTION	ons 98	je-	4/22/03	<u> </u>		Matrix *
Belinguished By Remy		ทูปีวิสิโกรเห	Received By/S	tored in		MK21U	**	The laboratory i	s to acide	ve a desection limi sel range compound	of 50.0 pt	Cive for Carbon 14	** The laborat	ory is to	S=Soil SE=Sediment
Relinguished By/Remove	ed From	Date/Time / 4	Received Bv/S	tored In	Ъ	ate/Time 1 y	600 () Technetium-99	Suondu	ni-89,90 — Total Si	, Isotopic	Thorium (Thorium	-232), Carbon I	4; lodino-	SO=Solid SI=Sledge W = Water
	13. febl	1-29 Date/Time				+ 29 · 0	<u>=</u> ⊃} ''	29; Nickel-63; Ne	phinim-	18	- 7	1/22/03			O-ON A=Air
Relinquished By/Kemove	S 10	-	Received By/S			_	100								DS=Drum Solids DL=Drum Liquids
Relinquished By/Remove		Date/Time	Received By/S	tored In	1503 D	ate/Time	EX	Personnel no							T=Tissac WI=Wipe L=Liquid
Relinguished By/Remove		Date/Time	Received By			ate/Time	945	relinquish sa	mples fi	rom the 3728					V=Vegetation X=Other
Relinquished By/Remove	/	<u> </u>	Received By/S	red In	<u>D</u>	ate/Time	775	Kei # 110 0	m <u>ပ</u>	11 103					
	Received By				<u></u>	Ti	tle	<u>.</u>	<u> </u>					Pate/Time	I
SECTION FINAL SAMPLE	Disposal Meth	od		=				Disp	osed By					Date/Time	
DISPOSITION	•													_	

FH-Central Plates	u Project	CI	HAIN OF CUST	ODY/S	AMPLE	ANAL	YSIS	REQUEST		F03	-006-66	Page 1	of . 1
Collector Johansen/Pope/Pfister			nny Contact Hulstrom	Telepho 373-3		_		Project Coordina TRENT, SJ	tor P	rice Code	8N ·		rnaround
Project Designation 200-PW-2/200-PW-4 OU - B	Sorehole Soil Sampling		ing Location -A-37 (C4106); (47.5'-50))				SAF No. F03-006	A	ir Quality		45	Days
Ice Chest No. ERC 9	76 055		Logbook No. F-N-3361		COA 117504ES	10		Method of Shipme Federal Express	ent		_		
Shipped To R	ERRA	Offsite	Property No.	307	220			Bill of Lading/Ai	r Bill No	SEE	057		
EBERLINE SERVICES (FOI POSSIBLE SAMPLE HAZA	RDS/REMARKS	// • 7 • 5											
			Preservation	Cool 4C	Cool 4C	Cool 4C	None	. None		1			
6			Type of Container	aG	æG	aG	aG	aG/					
Special Handling and/or S	Storage		No. of Container(s)	1	1	1	1						
-			Volume	120mL	60mL	120mL	60ml	L /60mL					-
	·		<u> </u>	Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Grease - 413.1	See item (ĭ/I. I					1
	SAMPLE ANALY	SIS					Instructi	7 107					
							1 n3/	(1)		TIETO:			
Sample No.	Matrix *	Sample Date	Sample Time							1.00.			
B16W83	SOIL	4/29/03	1020	1	*	1	7			BIGW	9 (W	\$(F)	
					<u> </u>	ļ							
				-	<u> </u>	ļ	-			<u> </u>		 	
CHAIN OF POSSESSIO	N.	Sign/Prin	t Names	<u> </u>	SPE	CIAL INST	RUCTIO	INS AS	v u	1/22/03		1	Matrix *
Relinquished By/Remorad From	Date/Time	Received By/Sto	red In ERC D	n Allan	** .7	he laboratury i	s to achiev	re a detection limit of t	on WTPH	LL/63 for Carbon 14. -D analysis.	** The labora	tory is to	S=Soil SE=Sediment
Relinquished By/Removed From	Date/Time 1969	Received By/Sto		ate/Time	70.2			1-89,90 — Total Sr; Iso	topic Thor	ium {Thorium-	232); Carbon-	14; Iodine-	SO=Solid SI=Studge
R. FORE Rich	1b = 4.2900	18	3728 4.	49-		Nickei-63: Ne		96	in a	Herles			W = Water O=Oil
Retinquished By/Bannoved From	-Defe/Time	Received By/Sto	"" - T	ate/Time	100								A=Air DS=Drum Solids DL=Drum Liquids
		Received By/Sto	red In D	ate/Time					٠		•		T=Tissuc W(=Wipe
Relinquished By/Removed From Relinquished By/Removed From	5 1 03 1/00 Date/Time		red in D	ate/Time	 	Pe	ersonnel linguish	not available to					L=Liquid V=Vegetation X=Other
Med Cx	5 · 2 · 03 0945 Date/Time	Received By/Sto		2-03 09 pate/Time	ليخ	Re	i # L B	not available to samples from the con	3728 € 3		•		
Retinquished By/Removed From	Date/Time	Received By/3to									-		
LABORATORY Received E SECTION	Зу			Т	itle							Date/Time	
FINAL SAMPLE Disposal M	Aethod					Disp	osed By					Date/Time	
DISPOSITION				_									

FH-Central Plateau Project			C	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-006-73 Page 1 of						of i						
Collector Johansen/Pope/Pfi	ister	<u> </u>	Comp	ompany Contact Telephone No. LC Hulstrom 373-3928 TRENT, SJ Price Code 8N					Data Turnaround							
Project Designation 200-PW-2/200-PV	W-4 OU - B	orehole Soil Sampling		mpling Location SAF No. 216-A-37 (C4106); (17.5'-20') SAF No. F03-006 Air Quality					45	Days						
Ice Chest No. ERC 96 05C				Field Logbook No. COA Method of Shipment HNF-N-3361 117504ES10 Federal Express												
Shipped To EBERLINE SER	RET VICES (For	RA ASTR	Offsi	te Property No.	AO	30	220	· ·		Bill of Lading	/Air Bill	No.5€ 0				
POSSIBLE SAMP	LE HAZA	RDS/REMARKS	, <u></u>	1			<u> </u>	T	T	` _	7		1			
				Preservat	ion	Cool 4C	Cool 4C	Cool 4C	Non	e None						
Special Handling	g and/or S	torage		Type of Con	tainer	aG	aG	aG	aG	29						
	•			No. of Contai	iner(s)	1	1	1	1		<u> </u>		<u> </u>			
				Volume	.	120mL	60mL	120mL	60m	L 60mL	ļ		1			
		SAMPLE ANAL	YSIS			Chromium Hex - 7196	NO2/NO3 - 353.2	Oil & Gresse - 413.1	See item Speci Instruct	ũ / I .						
									N ^y	<i>''</i> '			: 	<u> </u>		
Sample No	0.	Matrix *	Sample Date	Sample	Time											
B16W90		SOIL	4/28 03	1513	5	*	X	X								
								 			 		 	 -		
 _									_		 		 	 	 	
CHAIN OF P	OSSESSIO		Sign/Pri					CIAL INSTR		ONS .	982	4/22/03			Matrix *	
Relinquished Dy/Remov	ed From	Date/Time /4		ared in 3728 42		e/Time 1645						r 30.0 pC/vg for Carbon-14: ** The laboratory is to from WTPH-D analysis.				
Relinquished By/Remov		Date/Time	Received By/St	ored in	Date	e/Time	(1)	Technotium 99, Nickel 63: Nen	Strontion annium-2	1 89,90 Total Sr 32 JSV	Isotopic T	horium (Thorium-	232), Carbon !	4; Iodin o.	SO=Solid SI=Sledge W = Water	
REF 14 Relinquished By/Regnoy		Date/Time	Received By/Sto			e/Time				- 174	116	<i>((-)</i>			O=Oil A=Air D\$=Drum Solids	
3 JCALE XI	<u> Sel</u>	5/03 1106				<i>T</i> :	_								DL=Drum Liquids T=Tissue	
Relinquished By/Removed From Date/Time Received 5.2.03.09.15			Received By/S			e/Time <u>43</u> 094	<u> </u>								WI=Wipe L=Liquid V=Vegetation	
			Received By/Sto	ored in	Date	c/Time		Personnel r	ot avai samples	lable to from the 3728					X=Other	
Relinquished By/Removed From Date/Time Receive			Received By/Sta	ored In	Date	e/Time		Ref# [A	on_2	110	<u> </u>					
LABORATORY SECTION	Received By					Titl	e					· · · · · · · · · · · · · · · · · · ·	Ľ	ate/Time		
FINAL SAMPLE DISPOSITION	Disposal Mo	ethod			<u> </u>			Dispo	sed By				I	Date/Time		

FH-Central Plateau Project	_ _CH	IAIN OF CUST	<u>'ODY/S</u>	<u>AMPI</u>	LE ANAL	<u>YSIS</u>	REQUES	ST	FU	3-006-74	Page 1	ot 1	
Collector Johansen/Pope/Pfister	Compa LC H	LC Hulstrom 373-3928 TRENT, SJ						Data Tut					
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling		ng Location A-37 (C4106); (0.5')					SAF No. F03-006			Air Quality 🔲		45 Days	
Ice Chest No. ERC 96 056		ogbook No. -N-3361		COA 117504	IES10		Method of Si Federal Ex	press	· 				
Shipped To 1/05103 (TECRA Offsite Property No. A			30 Z	20			Bill of Ladi	ıg/Air Bill	No. SEE OSPC				
POSSIBLE SAMPLE HAZARDS/REMARKS			<u> </u>	Ţ-									
		Preservation	Cool 4C	Cool 44									
Special Handling and/or Storage	Special Handling and/or Storage Type of Container									<u> </u>	<u> </u>		
		No. of Container(s)	1	1		<u> </u>					ļ	<u></u>	
		Volume	60mL	250ml	L			1					
SAMPLE ANALYSIS				Chloro Herbicide EPA\$1	es -								
Sample No. Matrix *	Sample Date	Sample Time				· · · · · · · · · · · · · · · · · · ·	<u></u>		والمتارية والمسابط أنفي والسا	الما المارية درور عيان بياه علقت الرياري			
B16W91 SOIL L	28 03	1130	X	X	-								
			<u> </u>	 		 				<u> </u>	ļ		
<u> </u>			-	-	 _	 _				<u> </u>	 		
			├			[
CHAIN OF POSSESSION	Sign/Print	Names	<u></u>		PECIAL INSTE	L	NNS		<u> </u>	<u>. l</u>		Matrix *	
Date/Time // Date/Time	ate/Time ate/Time03 C ate/Time ate/Time	00	Personnel n relinquish Ref # LA	ot avail		3			Date/Time	S=Soli S=Sodiment SO~Solid SI=Studge W = Water O~Oli A~Air DS=Drum Solids DI=Drum Liquids T~Tissue WI=Wipe I—Liquid V~Vegetation X=Other			
FINAL SAMPLE Disposal Method DISPOSITION	· <u></u> · ·				Dispo	osed By					Date/Time		

LIONVILLE LABORATORY INCORPORATED SAMPLE RECEIPT CHECKLIST

LIENT: TNU Hamford

irchase Order/Project:

DATE: 5.2.03

AF# SOW# / Release #: F() 3-006

aboratory SDG #:

03051329

	00030329				
OTE:	ALL ENTRIES MARKED "NO" MUST BE H	EXPLAINED II	THE COMM	ENT SECTION	
1.	Custody seals on coolers or shipping container intact, signed and dated?	Yes	_ DNo .	DNA	D see Comment #
2.	Outside of coolers or shipping containers are free from damage?	Yes	□ No	□ N/A	🖸 see Comment #
3.	Airbill # recorded?	Yes	□ No	□ N/A	☐ see Comment #
4.	All expected paperwork received (coc and other client specific: historical data, alpha/beta or other screening data as applicable)? (paperwork sealed in plastic bag and taped to inside lid)	Dives	□ No	DNA	see Comment #
5.	Sample containers are intact?	Yes	□ No	□ N/A	D see Comment #
6.	Custody seals on sample containers intact, signed and dated?	O Yes	□ No	□ N/A	See Comment #
7.	All samples on coc received?	Yes	□ No	DNA	· D see Comment #
8.	All sample label information matches coc?	D/Yes	□ № 0	DN/A·	see Comment #
9.	Laboratory QC samples designated on coc? (QC stickers placed on bottles?)	□ Yes	□ No	DN/A	see Comment #
10	Shipment meets LvLl Sample Acceptance Policy? (identify all bottles not within policy. See reverse side for policy)	Yes	□ No	D N/A	□ sec Comment #
11	. Where applicable, bar code labels are affixed to coc?	□ Yes	□ No	DON/A	Sec Comment #
12	. coc signed and dated?	Dyes	□ No	DNA	☐ see Comment #
13	. coc will be faxed or emailed to client?	 Yes .	□ No	DNA	□ see Comment #
14	. Project Manager/Client contacted concerning discrepancies? (name/date)	□ Yes	, D No	ENIA	☐ see Comment #

Cooler # / temp (°C) and Comments:

ERC 96.056 / 1.3"

Laboratory Sample Custodian:

Laboratory Project Manager:

Dignoon



June 17, 2003

Mr. Steve Trent Fluor Hanford Inc. 825 Jadwin Avenue Richland, WA 99352

Reference:

P.O. #630

Eberline Services R3-05-013-7507, SDG H2194

Dear Mr. Trent:

Enclosed is the data report for six solid samples designated under SAF No. F03-006 received at Eberline Services on May 2, 2003. The samples were analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion

Melin Manm

Program Manager

MCM

Enclosure: Data Package



Case Narrative

Page 1 of 2

1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H2194 was composed of six solid (soil) samples designated under SAF No. F03-006 with a Project Designations of: 200-PW-2/200-PW-4 OU – Borehole Soil Sampling.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analyses

No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analyses

No problems were encountered during the course of the analyses.

2.4 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.5 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.6 lodine-129 Analyses

No problems were encountered during the course of the analyses.

2.7 Isotopic Thorium Analyses

No problems were encountered during the course of the analyses.

2.8 Neptunium-237 Analyses

No problems were encountered during the course of the analyses.

Case Narrative

Page 2 of 2

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Melissa C. Mannion

Program Manager

E B E R L I N E S E R V I C E S / R I C H M O N D SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG_H2194</u>

SUMMARY DATA SECTION

TABLE OF	СО	N T	E N	T S	
About this section	•			•	1
Sample Summaries				•	3
Prep Batch Summary		-	•	•	5
Work Summary			•		6
Method Blanks	•		•		9
Lab Control Samples	•	•	•	•	10
Duplicates	•				11
Matrix Spikes				•	12
Data Sheets	•			•	13
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Melina Mann	
Prepared by	
Melin Mann	
Reviewed by	

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-TOC
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2194

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

REPORT GUIDES

Page 1
SUMMARY DATA SECTION

Page 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion

GUIDE, cont.

Client	<u>Hanford</u>	
Contract	No. 630	
Case no	SDG H2194	

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

REPORT GUIDES
Page 2
SUMMARY DATA SECTION
Page 2

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND SAMPLE DELIVERY GROUP H2194

SDG <u>7507</u> Contact <u>Melissa C. Mannion</u>

LAB SAMPLE SUMMARY

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG_H2194</u>

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R305013-01	B16W79	216-A-37 (C4106)	SOLID	F03-006	F03-006-62	04/28/03 13:50
R305013-02	B16W80	216-A-37 (C4106)	SOLID	F03-006	F03-006-63	04/28/03 15:10
R305013-03	B16W81	216-A-37 (C4106)	SOLID	F03-006	F03-006-64	04/29/03 07:45
R305013-04	B16W82	216-A-37 (C4106)	SOLID	F03-006	F03-006-65	04/29/03 09:00
R305013-05	B16W83	216-A-37 (C4106)	SOLID	F03-006	F03-006-66	04/29/03 10:20
R305013-06	B16W90	216-A-37 (C4106)	SOLID	F03-006	F03-006-73	04/28/03 15:10
R305013-07	Lab Control Sample		SOLID	F03-006		
R305013-08	Method Blank		SOLID	F03-006		
R305013-09	Duplicate (R305013-04)	216-A-37 (C4106)	SOLID	F03-006		04/29/03 09:00
R305013-10	Spike (R305013-04)	216-A-37 (C4106)	SOLID	F03-006		04/29/03 09:00

LAB SUMMARY
Page 1
SUMMARY DATA SECTION
Page 3

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 06/17/03

EBERLINE SERVICES/RICHMOND SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion

QC SUMMARY

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H2194</u>

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS S		LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7507	F03-006-62	B16W79	SOLID	93.9	149.0 g		05/02/03	4	R305013-01	7507-001
	F03-006-63	B16W80	SOLID	95.3	158.5 g		05/02/03	4	R305013-02	7507-002
	F03-006-64	B16W81	SOLID	95.5	156.2 g		05/02/03	3	R305013-03	7507-003
	F03-006-65	B16W82	SOLID	94.5	152.0 g		05/02/03	3	R305013-04	7507-004
	F03-006-66	B16W83	SOLID	94.3	148.1 g		05/02/03	3	R305013-05	7507-005
	F03-006-73	B16W90	SOLID	95.9	160.9 g		05/02/03	4	R305013-06	7507-006
		Method Blank	SOLID						R305013-08	7507-008
		Lab Control Sample	SOLID						R305013-07	7507-007
		Duplicate (R305013-04)	SOLID	94.5	152.0 g		05/02/03	3	R305013-09	7507-009
		Spike (R305013-04)	SOLID		152.0 g		05/02/03	3	R305013-10	7507-010

QC SUMMARY
Page 1
SUMMARY DATA SECTION
Page 4

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 06/17/03

SDG	7507		
Contact	<u>Melissa</u>	c.	<u>Mannion</u>

PREP BATCH SUMMARY

Client	Hanford
Contract	No. 630
Case no	SDG H2194

			PREPARATION	ERROR			- PL#	NCHETS	ANALYZ	ED		QUALI-
TEST	MATRIX	METHOD	BATCH	2σ %	CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	FIERS
•	Spectros	• •	70/0 454					•		1.0		
NP	SOLID	Neptunium in Soil	7060-151	5.0	6			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Soil	7060-151	5.0	6			1	1	1/1		
Beta	Counting									_		
SR	SOLID	Total Strontium in Soil	7060-151	10.0	6			1	1	1/1		
TC	SOLID	Technetium 99 in Soil	7060-151	10.0	6			1	1	1/1		
Gamma	Spectros	сору	· ·					-				
1	SOLID	Iodine 129 in Soil	7060-151	10.0	6		_	1	1	1/1		
Liqui	d Scintíl	lation Counting										
C	SOLID	Carbon 14 in Soil	7060-151	10.0	6		-	1	1	1/1		
Н	SOLID	Tritium in Soil	7060-151	10.0	6			1	1	1/1	1/1	х
NI_L	SOLID	Nickel 63 in Soil	7060-151	10.0	6			1	1	1/1	1/1	

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.

Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

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Protocol <u>Hanford</u>

Version <u>Ver 1.0</u>

Form <u>DVD-PBS</u>

Version <u>3.06</u>

Report date <u>06/17/03</u>

SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion

LAB WORK SUMMARY

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H2194</u>

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE II LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF- FIX	ANALYZED	REVIEWED	вү	METHOD
				7507.004	C		05/28/03	06/17/03	MCM	Carbon 14 in Soil
R305013-01	B16W79		001.10	7507-001 7507-001	Н		06/10/03	06/17/03	MCM	Tritium in Soil
04/28/03	216-A-37 (C4106		SOLID	7507-001	n I		06/04/03	06/17/03	MCM	Iodine 129 in Soil
05/02/03	F03-006-62	F03-006					05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-001 7507-001	NI_L Np		06/09/03	06/17/03	MCM	Neptunium in Soil
				7507-001	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-001	TC			06/17/03	MCM	Technetium 99 in Soil
				7507-001	TH		06/16/03 06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-02	B16W80	··		7507-002	С		05/28/03	06/17/03	MCM	Carbon 14 in Soil
04/28/03	216-A-37 (C4106))	SOLID	7507-002	H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-63	F03-006		7507-002	Ī		06/05/03	06/17/03	MCM	Iodine 129 in Soil
,				7507-002	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-002	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-002	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-002	TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
				7507-002	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-03	B16W81			7507-003	С		05/28/03	06/17/03	MCM	Carbon 14 in Soil
04/29/03	216-A-37 (C4106))	SOLID	7507-003	Н		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-64	F03-006		7507-003	I		06/06/03	06/17/03	MCM	Iodine 129 in Soil
				7507-003	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-003	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-003	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-003	TC		06/15/03	06/17/03	MCM	Technetium 99 in Soil
				7507-003	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-04	B16W82			7507-004	С	<u>-</u>	05/28/03	06/17/03	мсм	Carbon 14 in Soil
04/29/03	216-A-37 (C4106))	SOLID	7507-004	H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-65	F03-006		7507-004	I		06/07/03	06/17/03	MCM	Iodine 129 in Soil
				7507-004	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
				7507-004	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
				7507-004	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
				7507-004	TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
				7507-004	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil

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Version <u>3.06</u>

Report date <u>06/17/03</u>

SDG <u>7507</u> Contact <u>Melissa</u> C. Mannion

WORK SUMMARY, cont.

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H2194</u>

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY SAF		RIX Planch	ET TEST	SUF- FIX	ANALYZED	REVIEWED	BY	METHOD
R305013-05	B16\\83		7507-0	05 C		05/29/03	06/17/03	MCM	Carbon 14 in Soil
04/29/03	216-A-37 (C4106)	SOL	ID 7507-0	05 H		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-66 F03-	006	7507-0	05 I		06/08/03	06/17/03	MCM	Iodine 129 in Soil
			7507-0	05 NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
			7507-0	05 NP		06/06/03	06/17/03	MCM	Neptunium in Soil
			7507-0	05 SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
			7507-0	05 TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
		_	7507-0	05 TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-06	B16W90		7507-0	06 C		05/29/03	06/17/03	MCM	Carbon 14 in Soil
04/28/03	216-A-37 (C4106)	\$OL	ID 7507-0	06 н		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006-73 F03-	006	7507-0	06 I		06/10/03	06/17/03	MCM	Iodine 129 in Soil
			7507-0	06 NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
			7507-0	06 NP		06/06/03	06/17/03	MCM	Neptunium in Soil
			7507-0	06 SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
			7507-0	06 TC		06/16/03	06/17/03	MCM	Technetium 99 in Soil
			7507-0	06 TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-07	Lab Control Sample		7507-0	07 C	-	05/29/03	06/17/03	MCM	Carbon 14 in Soil
		SOL	ID 7507-0	0 7 H		06/11/03	06/17/03	MCM	Tritium in Soil
	F03-	006	7507-0	1 70		06/10/03	06/17/03	MCM	Iodine 129 in Soil
			7507-0	07 NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
			7507-0	07 NP		06/06/03	06/17/03	MCM	Neptunium in Soil
			7507-0	07 SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
			7507-0	07 TC		06/15/03	06/17/03	MCM	Technetium 99 in Soil
			7507-0	07 TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
305013-08	Method Blank		7507-0	08 C		05/28/03	06/17/03	мсм	Carbon 14 in Soil
		SOL	ID 7507-0	18 ВС		06/11/03	06/17/03	MCM	Tritium in Soil
	F03-	006	7507-0	1 80		06/11/03	06/17/03	MCM	Iodine 129 in Soil
			7507-0	08 NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
			7507-0	08 NP		06/06/03	06/17/03	MCM	Neptunium in Soil
			7507-0	08 SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
			7507-0	08 тс		06/16/03	06/17/03	MCM	Technetium 99 in Soil
			7507-0	ов тн		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil

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SDG <u>7507</u> Contact <u>Melissa C. Mannion</u>

WORK SUMMARY, cont.

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H2194</u>

LAB SAMPLE COLLECTED	CLIENT SAMPLE ID	MATRIX			SUF-				
RECEIVED	CUSTODY SAF No	HAIRIA	PLANCHET	TEST	FIX	ANALYZED	REVIEWED	BY	METHOD
R305013-09	Duplicate (R305013-04)		7507-009	С		05/29/03	06/17/03	MCM	Carbon 14 in Soil
04/29/03	216-A-37 (C4106)	SOLID	750 7-009	н		06/11/03	06/17/03	MCM	Tritium in Soil
05/02/03	F03-006		7507-009	I		06/11/03	06/17/03	MCM	Iodine 129 in Soil
			7507-009	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
			7507-009	NP		06/06/03	06/17/03	MCM	Neptunium in Soil
			7507-009	SR		05/28/03	06/17/03	MCM	Total Strontium in Soil
			7507-009	TC		06/15/03	06/17/03	MCM	Technetium 99 in Soil
			7507-009	TH		06/04/03	06/17/03	MCM	Thorium, Isotopic in Soil
R305013-10	Spike (R305013-04)		7507-010	н		06/11/03	06/17/03	МСМ	Tritium in Soil
04/29/03	216-A-37 (C4106)	SOLID	7507-010	NI_L		05/31/03	06/17/03	MCM	Nickel 63 in Soil
05/02/03	F03-006								

TEST	SAF No	COUNTS	OF TESTS BY SAM	PLE TYPE CLIENT MORE	RE BLANK	LCS	DUP SPIKE	TOTAL
С	F03-006	Carbon 14 in Soil	c14_cox_Lsc	6	1	1	1	9
Н	F03-006	Tritium in Soil	906.0_H3_LSC	6.	1	1	1 1	10
I	F03-006	Iodine 129 in Soil	I129_SEP_LEPS_GS	6	1	1	1	9
NI_L	F03-006	Nickel 63 in Soil	NI63_LSC	6	1	1	1 1	10
NP	F03-006	Neptunium in Soil	NP237_LLE_PLATE_AEA	6	1	1	1	9
SR	F03-006	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	6	1	1	1	9
TC	F03-006	Technetium 99 in Soil	TC99_TR_SEP_LSC	6	1	1	1	9
TH	F03-006	Thorium, Isotopic in Soil	THISO_IE_PLATE_AEA	6	1	1	1	9
TOTALS	_			48	8	8	8 2	74

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7507-008

METHOD BLANK

Method Blank

1	7507 Melissa C, Mannion	Client/Case no Contract	 SDG_H2194
Lab sample id Dept sample id		Client sample id Material/Matrix SAF No	 SOLID

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	-0.065	0.17	0.30	400	ט	Н
Carbon 14	14762-75-5	-0.216	1.8	3.0	50	U	C
Nickel 63	13981-37-8	2.75	1.4	2.4	30	U	NI_L
Total Strontium	SR-RAD	0.100	0.16	0.30	1.0	U	SR
Technetium 99	14133-76-7	0.127	0.18	0.54	15	U	TC
Thorium 228	14274-82-9	0.041	0.081	0.31		U	TH
Thorium 230	14269-63-7	0.162	0.16	0.31	1.0	บ	TH
Thorium 232	TH-232	0	0.081	0.31	1.0	U	TH
Neptunium 237	13994-20-2	0.036	0.073	0.11	1.0	U	NP
Iodine 129	15046-84-1	0.294	0.70	1.6	2.0	υ	I

200-PW-2/200-PW-4 OU-Borehole Soil

QC-BLANK #44677

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7507-007

LAB CONTROL SAMPLE

Lab Control Sample

SDG <u>7507</u> Contact <u>Melîssa C. Mannion</u>	Client/Case no <u>Hanford</u> SDG H2194 Contract <u>No. 630</u>
Lab sample id <u>R305013-07</u> Dept sample id <u>7507-007</u>	Client sample id <u>Lab Control Sample</u> Material/Matrix

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	12.4	0.43	0.30	400		н	13.0	0.52	95	84-116	80-120
Carbon 14	1730	35	9.0	50		С	1950	78	89	85-115	80-120
Nickel 63	215	4.7	2.9	30		NI_L	228	9.1	94	84-116	80-120
Total Strontium	18.4	0.87	0.32	1.0		SR	21.0	0.84	88	84-116	80-120
Technetium 99	121	2.9	0.55	15		тс	109	4.4	111	82-118	80-120
Thorium 230	36.9	3.9	0.28	1.0		TH	40.8	1.6	90	83-117	80-120
Neptunium 237	17.7	1.7	0.11	1.0		NP	19.9	0.80	89	84-116	80-120
Iodine 129	248	2.5	2.6	2.0		1	232	9.3	107	83-117	80-120

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QC-LCS #44676				
	QC-LCS	#44676		

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Lab id <u>EBRLNE</u>

Protocol <u>Hanford</u>

Version <u>Ver 1.0</u>

Form <u>DVD-LCS</u>

Version <u>3.06</u>

Report date <u>06/17/03</u>

7507-009

DUPLICATE

B16W82

	7507		Client/Case no	
Contact	<u>Melissa C. Mannion</u>		Contract	NO. 63U
	DUPLICATE	ORIGINAL		
Lab sample id	R305013-09 La	b sample id <u>R305013-04</u>	Client sample id	B16W82
Dept sample id	<u>7507-009</u> Dep	t sample id <u>7507-004</u>	Location/Matrix	216-A-37 (C4106) SOLID
		Received <u>05/02/03</u>	Collected/Weight	04/29/03 09:00 152.0 g
% solids	94.5	% solids <u>94.5</u>	Custody/SAF No	F03-006-65 F03-006

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCî/g	RDL pCi/g	QUALI- FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI- FIERS	RPD %	3σ I ΤΟΤ L:	PROT
Tritium	148	1.5	0.26	400		н	154	1.6	0.27		4	21	
Carbon 14	-0.788	1.5	2.6	50	Ü	С	-0.093	1.7	2.8	U	-		
Nickel 63	11.3	1.7	2.5	30		NI_L	14.4	1.8	2.5		24	36	
Total Strontium	-0.012	0.12	0.26	1.0	U	SR	-0.012	0.12	0.25	U	-		
Technetium 99	0.160	0.19	0.55	15	U	тс	0.170	0.18	0.52	U	-		
Thorium 228	0.531	0.31	0.29			TH	0.299	0.23	0.29		56	140	
Thorium 230	0.379	0.23	0.29	1.0		TH	0.299	0.23	0.29		24	144	
Thorium 232	0.265	0.23	0.29	1.0	U	TH	0.411	0.23	0.29		43	145	
Neptunium 237	0	0.079	0.12	1.0	U	NP	0.032	0.063	0.095	U	-		
Iodine 129	-0.482	1.3	2.9_	2.0	U	I	0.256	0.87	2.0	U	-		

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QC-DUP#4	44678		

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Protocol <u>Hanford</u>

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SAMPLE DELIVERY GROUP H2194

7507-010

MATRIX SPIKE

B16W82

SDG	7507		Client/Case no	Hanford SDG H2194
Contact	<u>Melissa C. Mannion</u>		Contract	No. 630
1	MATRIX SPIKE	ORIGINAL		
Lab sample id	R305013-10	Lab sample id <u>R305013-04</u>	Client sample id	B16W82
Dept sample id	7507-010	Dept sample id <u>7507-004</u>	Location/Matrix	216-A-37 (C4106) SOLID
		Received <u>05/02/03</u>	Collected/Weight	04/29/03 09:00 152.0 g
% solids	94.5	% solids <u>94.5</u>	Custody/SAF No	<u>F03-006-65</u> <u>F03-006</u>

ANALYTE	SPIKE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	ORIGINAL pCi/g	2σ ERR (COUNT)	REC 3σ LMTS % (TOTAL)	
Tritium Nickel 63	196 855	2.0 17	0.30 5.8	400 30	X	H NI_L	50.1 916	2.0 37	154 14.4	1.6	84 25-175 92 84-116	

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QC-MS#4	44679			

MATRIX SPIKES
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7507-001

DATA SHEET

B16W79

	7507 Melissa C. Mannion	Client/Case no Contract		SDG_H2194
			216-A-37 (C4106) 04/28/03 13:50 149	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	134	1.4	0.26	400		н
Carbon 14	14762-75-5	1.47	1.8	3.0	50	υ	С
Nickel 63	13981-37-8	1.81	1.5	2.5	30	บ	NI_L
Total Strontium	SR-RAD	1.70	0.26	0.25	1.0		SR
Technetium 99	14133-76-7	0.166	0.27	0.55	15	υ	TC
Thorium 228	14274-82-9	0.572	0.29	0.34			TH
Thorium 230	14269-63-7	0.143	0.14	0.27	1.0	ប	TH
Thorium 232	TH-232	0.393	0.22	0.27	1.0		TH
Neptunium 237	13994-20-2	0.016	0.031	0.047	1.0	υ	NP
Iodine 129	15046-84-1	0.221	0.81	1.8	2.0	ប	I

200-PW-2/200-PW-4 OU-Borehole Soil

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7507-002

DATA SHEET

B16W80

1	7507 Melissa C. Mannion	Client/Case no Contract		SDG H2194
Lab sample id Dept sample id Received % solids	7507-002 05/02/03	•	216-A-37 (C4106) 04/28/03 15:10 158.	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	152	1.5	0.27	400		H
Carbon 14	14762-75-5	0.302	1.5	2.6	50	U	C
Nickel 63	13981-37-8	2.64	1.6	2.6	30		NI L
Total Strontium	SR-RAD	0.001	0.12	0.25	1.0	Ü	SR
Technetium 99	14133-76-7	0.150	0.25	0.55	15	ប	TC
Thorium 228	14274-82-9	0.187	0.22	0.36		υ	TH
Thorium 230	14269-63-7	0.075	0.15	0.29	1.0	ប	TH
Thorium 232	TH-232	0.299	0.23	0.29	1.0		TH
Neptunium 237	13994-20-2	0	0.080	0.12	1.0	ប	NP
Iodine 129	15046-84-1	-0.047	0.92	2.1	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

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7507-003

DATA SHEET

B16W81

7507 Melissa C. Mannion	Client/Case no Contract		SDG_H2194
	•	216-A-37 (C4106) 04/29/03 07:45 156.	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	130	1.3	0.26	400		н
Carbon 14	14762-75-5	-0.315	1.8	3.0	50	ប	С
Nickel 63	13981-37-8	2.05	1.5	2.5	30	ប	NI L
Total Strontium	SR-RAD	-0.019	0.15	0.32	1.0	ប	SR
Technetium 99	14133-76-7	0.189	0.20	0.57	15	υ	TC
Thorium 228	14274-82-9	0.348	0.31	0.37		U	TH
Thorium 230	14269-63-7	0.464	0.31	0.37	1.0		TH
Thorium 232	TH-232	0.541	0.31	0.30	1.0		TH
Neptunium 237	13994-20-2	0.072	0.072	0.11	1.0	υ	NP
Iodine 129	15046-84-1	-0.152	0.83	1.9	2.0	υ	I.

200-PW-2/200-PW-4 OU-Borehole Soil

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7507-004

DATA SHEET

B16W82

ł .	7507 Melissa C. Mannion	Client/Case no Contract		DG_H2194
			216-A-37 (C4106) 04/29/03 09:00 152.0	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	154	1.6	0.27	400		H
Carbon 14	14762-75-5	-0.093	1.7	2.8	50	U	C
Nickel 63	13981-37-8	14.4	1.8	2.5	30		NI L
Total Strontium	SR-RAD	-0.012	0.12	0.25	1.0	U	SR
Technetium 99	14133-76-7	0.170	0.18	0.52	15	U	TC
Thorium 228	14274-82-9	0.299	0.23	0.29			TH
Thorium 230	14269-63-7	0.299	0.23	0.29	1.0		TH
Thorium 232	TH-232	0.411	0.23	0.29	1.0		TH
Neptunium 237	13994-20-2	0.032	0.063	0.095	1.0	ΰ	NP
Iodine 129	15046-84-1	0.256	0.87	2.0	2.0	Ū	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS
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7507-005

DATA SHEET

B16W83

	7507 Melissa C. Mannion	Client/Case no Contract		SDG_H2194
- E		-	216-A-37 (C4106) 04/29/03 10:20 148.	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	Quali- Fiers	TEST
Tritium	10028-17-8	267	2.7	0.37	400		Н
Carbon 14	14762-75-5	-0.493	1.7	2.9	50	U	C
Nickel 63	13981-37-8	1.34	1.5	2.5	30	U	NI L
Total Strontium	SR-RAD	-0.060	0.12	0.27	1.0	U	sr
Technetium 99	14133-76-7	0.113	0.31	0.59	15	ប	TC
Thorium 228	14274-82-9	0.376	0.23	0.29			TH
Thorium 230	14269-63-7	0.300	0.23	0.29	1.0		TH
Thorium 232	TH-232	0.376	0.23	0.29	1.0		TH
Neptunium 237	13994-20-2	0	0.085	0.13	1.0	ប	NP
Iodine 129	15046-84-1	-0.130	1.0	2.3	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

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7507-006

DATA SHEET

B16W90

	7507 Melissa C. Mannion	Client/Case no Contract	194
1		Collected/Weight	 LID

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI- FIERS	TEST
Tritium	10028-17-8	147	1.5	0.27	400	-	Н
Carbon 14	14762 - 75-5	0.926	1.6	2.7	50	U	C
Nickel 63	13981-37-8	1.17	1.6	2.6	30	U	NI L
Total Strontium	SR-RAD	-0.087	0.11	0.25	1.0	U	SR
Technetium 99	14133-76 - 7	0.072	0.19	0.60	15	υ	TC
Thorium 228	14274-82-9	0.307	0.23	0.29			TH
Thorium 230	14269-63-7	0.268	0.23	0.29	1.0	υ	TH
Thorium 232	TH-232	0.307	0.23	0.29	1.0		TH
Neptunium 237	13994-20-2	0.040	0.079	0.12	1.0	ប	NP
Todine 129	15046-84-1	-0.070	2.0	4.4	2.0	U	I

200-PW-2/200-PW-4 OU-Borehole Soil

DATA SHEETS
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Test <u>NP</u> Matrix <u>SOLID</u> SDG <u>7507</u>

Contact Melissa C. Mannion

LAB METHOD SUMMARY

NEPTUNIUM IN SOIL ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2194

RESULTS

LAB SAMPLE ID	RAW SU	JF- IX PLANCHET	CLIENT SAMPLE ID	Neptunium 237	
Preparation	batch 7	7060-151			
R305013-01		7507-001	B16W79	U	
R305013-02		7507-002	B16W80	U	
R305013-03		7507-003	B16W81	U	
R305013-04		7507-004	B16W82	U	
R305013-05		7507-005	B16W83	U	
R305013-06		7507-006	B16W90	U	
R305013-07		7507-007	LCS (QC ID=44676)	ok	
R305013-08		7507-008	BLK (QC ID=44677)	U	
R305013-09		7507-009	Duplicate (R305013-04)	- U	

METHOD PERFORMANCE

	SUF-	CAMPLE IN	MDA	ALIQ	PREP	DILU- Tion	YIELD	EFF %			DRIFT KeV		PREPARED	ANAL - YZED	DETECTOR
SAMPLE ID TEST	FIX CLIENT	SAMPLE ID	pCi/g	g	FAC	TION			#0111	Kev	Kea	HELD	PREPARED	1 ZED	DETECTOR
Preparation bate	h 7060-151	2σ prep error	5.0 % Re	ference	Lab N	otebook	7060	pg.	151						
R305013-01	B16W79		0.047	0.500			73		233			42	06/06/03	06/09	SS-040
R305013-02	B16W80		0.12	0.500			63		102			39	06/06/03	06/06	SS-010
R305013-03	B16W81		0.11	0.500			75		102			38	06/06/03	06/06	SS-011
R305013-04	B16W82		0.095	0.500			82		103			38	06/06/03	06/06	SS-015
R305013-05	B16W83		0.13	0.500			63		103			38	06/06/03	06/06	SS-016
R305013-06	B16W90		0.12	0.500			68		102			39	06/06/03	06/06	ss-039
R305013-07	LCS (QC	ID=44676)	0.11	0.500			71		103				06/06/03	06/06	SS-040
R305013-08	BLK (QC	ID=44677)	0.11	0.500			71		103				06/06/03	06/06	SS-041
R305013-09	Duplica	te (R305013-04)	0.12	0.500			65		103			38	06/06/03	06/06	ss-042
	(00	ID=44678)													
Nominal values a	nd limits fro	m method	1.0	0,500			20-10	5	100			180			

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SAMPLE	DELIVERY	GROUP	H219
SAFIF LL	DELLACKI	GROOF	112.1

Test	<u>NP</u>	Mat	гіх	SOLID	_
SDG	<u>7507</u>				_
ontact	Melis	ssa	c.	Mannion	

LAB METHOD SUMMARY, cont.

NEPTUNIUM IN SOIL ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG H2194

PROCEDURES	REFERENCE CP-060	NP237_LLE_PLATE_AEA Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
1	CP-930	Neptunium from Solids and Water by Extraction
		Chromatography, rev 0
	CP-008	Heavy Element Electroplating, rev 7
i		

MDA <u>0.11</u> ± <u>0.049</u> AVERAGES ± 2 SD FOR 9 SAMPLES YIELD 70 ± 12

METHOD SUMMARIES Page 2 SUMMARY DATA SECTION Page 20

SAMPLE DELIVERY GROUP H2194

Test TH Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

| Client | Hanford | Contract | No. 630 | Contract | SDG | H2194 | |

RESULTS

Γ y Β	RAW SUF-			
SAMPLE ID	TEST FIX PLANCHET	CLIENT SAMPLE ID	Thorium 230	
Preparation	batch 7060-151			
R305013-01	7507-001	B16W79	U	
R305013-02	7507-002	B16W80	บ	
R305013-03	7507-003	B16W81	0.464	
R305013-04	7507-004	B16W82	0.299	
R305013-05	7507-005	B16W83	0.300	
R305013-06	7507-006	B16W90	U	
R305013-07	7507-007	LCS (QC ID=44676)	ok	
R305013-08	7507-008	BLK (QC ID=44677)	U	
R305013-09	7507-009	Duplicate (R305013-04)	ok	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX		SAMPLI	≣ ID		MAX MI pCi/s		PREI FAI		YIELD %		COUNT	FWHM keV		PREPARED	ANAL- YZED	DETECTOR
Preparation	batch	706	0-151	2σ	огер	error	5.0 %	Referen	e Lab	Noteboo	k 7060	pg.	151			<u> </u>		•
R305013-01			B16W79				0.2	7 0.25)		102		152		37	06/04/03	06/04	SS-039
R305013-02			B16W80				0.29	0.25)		95		152		37	06/04/03	06/04	ss-040
R305013-03			B16W81				0.3	7 0.25)		90		152		36	06/04/03	06/04	ss-041
R305013-04			B16W82				0.29	0.25)		93		152		36	06/04/03	06/04	ss-042
R305013-05			B16W83				0.29	0.25)		90		152		36	06/04/03	06/04	ss-043
R305013-06			B16W90				0.29	0.25)		84		152		37	06/04/03	06/04	SS-044
R305013-07			LCS (Q	C ID=44	676)	0.28	0.25)		96		152			06/04/03	06/04	SS-047
R305013-08			BLK (Q	C ID=44	677)	0.3	0.25)		85		153			06/04/03	06/04	SS-048
R305013-09			Duplica (Q	ate (R3 C ID=44		-	0.29	0.250)		104		153		36	06/04/03	06/04	SS-049
Nominal valu	ues ar	d li	mits fr	om meth	nod		1.0	0.25)		20-10	5	150		 180			

METHOD SUMMARIES
Page 3
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SAMPLE DELIVERY GROUP #2194

Test	<u>TH</u>	Mat	rix	SOLID
SDG	<u>7507</u>			
Contact	Melis	ssa	С.	<u>Mannion</u>

LAB METHOD SUMMARY, cont. THORIUM, ISOTOPIC IN SOIL ALPHA SPECTROSCOPY

Client <u>Hanford</u> Contract No. 630 Contract SDG H2194

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
}	CP-900	Thorium in Water and Dissolved Solid Samples by
i i		Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 7

MDA 0.30 ± 0.058 AVERAGES ± 2 SD YIELD <u>93</u> ± <u>14</u> FOR 9 SAMPLES

METHOD SUMMARIES Page 4 SUMMARY DATA SECTION Page 22

SAMPLE DELIVERY GROUP H2194

Test <u>SR</u> Matrix <u>SOLID</u>
SDG 7507

Contact <u>Melissa C. Mannion</u>

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client <u>Hanford</u>
Contract <u>No. 630</u>
Contract <u>SDG K2194</u>

RESULTS

IAB SAMPLE ID	RAW SUF- TEST FIX		CLIENT SAMPLE ID	Total Strontium	
		T ETHIONE)			
Preparation	n batch 706	0-151			
R305013-01		7507-001	B16W79	1.70	
R305013-02		7507-002	B16W80	U	
R305013-03		7507-003	B16W81	U	
R305013-04		7507-004	B16W82	U	
R305013-05		7507-005	B16W83	U	
R305013-06		7507-006	B16W90	U	
R305013-07		7507-007	LCS (QC ID=44676)	ok	
R305013-08		7507-008	BLK (QC ID=44677)	U	
R305013-09		7507-009	Duplicate (R305013-04)	- U	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW SUF		SAMPLE ID	MDA pCi/g	ALIQ 9	PREP FAC		YIELD %	EFF %	COUNT min			PREPARED	ANAL - YZED	DETECTOR
Preparation	batch 70	60-151	2σ prep error	10.0 %	Reference	Lab N	lotebool	c 7060	pg.	151			<u>.</u>		
R305013-01		B16W79		0.25	1.00			95		102		30	05/28/03	05/28	GRB-217
R305013-02		B16W80		0.25	1.00			96		102		30	05/28/03	05/28	GRB-218
R305013-03		B16W81		0.32	1.00			78		102		29	05/28/03	05/28	GRB-219
R305013-04		B16W82		0.25	1.00			95		102		29	05/28/03	05/28	GRB-220
R305013-05		B16W83		0.27	1.00			91		102		29	05/28/03	05/28	GRB-221
R305013-06		B16W90		0.25	1.00			98		102		30	05/28/03	05/28	GRB-222
R305013-07		LCS (QC	ID=44676)	0.32	1.00			78		102			05/28/03	05/28	GRB-223
R305013-08		BLK (QC	ID=44677)	0.30	1.00			81		102			05/28/03	05/28	GRB-224
R305013-09		•	te (R305013-04) ID=44678)	0.26	1.00			98		100		29	05/28/03	05/28	GRB-232
Nominal val	ues and l	imits fro	m method	1.0	1.00			30-10	 5	100	 	180			

METHOD SUMMARIES
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Lab id <u>EBRLNE</u>

Protocol <u>Hanford</u>

Version <u>Ver 1.0</u>

Form <u>DVD-LMS</u>

Version <u>3.06</u>

Report date <u>06/17/03</u>

SAMPLE DELIVERY GROUP H2194

Test SR Matrix SOLID SDG 7507 Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont. TOTAL STRONTIUM IN SOIL BETA COUNTING

Client	Hanford
Contract	No. 630
Contract	SDG H2194

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
j	CP-060	Soil Preparation, rev 4
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-381	Strontium in Solids, rev 1

MDA <u>0.27</u> ± <u>0.061</u> AVERAGES ± 2 SD FOR 9 SAMPLES YIELD 90 ± 17

METHOD SUMMARIES Page 6 SUMMARY DATA SECTION Page 24

SAMPLE DELIVERY GROUP H2194

Test TC Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

TECHNETIUM 99 IN SOIL BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2194

RESULTS

IAB SAMPLE ID	RAW SUF- TEST FIX PLANCHET	CLIENT SAMPLE ID	Technetium 99	
Preparation	batch 7060-151			
R305013-01	7507-001	B16W79	U	
R305013-02	7507-002	B16W80	u	
R305013-03	7507-003	B16W81	U	
R305013-04	7507-004	B16W82	U	
R305013-05	7507-005	816W83	U	
R305013-06	7507-006	B16W90	U	
R305013-07	7507-007	LCS (QC ID=44676)	ok	
R305013-08	7507-008	BLK (QC ID=44677)	υ	
R305013-09	7507-009	Duplicate (R305013-04)	- U	

METHOD PERFORMANCE

200-PW-2/200-PW-4 OU-Borehole Soil

	SUF- T FIX CLIENT SAMPLE ID	MDA pCî/g	AL IQ	PREP FAC	DILU- Tion	YIELD %	EFF %	_	DRIFT KeV		PREPARED	ANAL- YZED	DETECTOR
Preparation bat	ch 7060-151 2σ prep erro	or 10.0 % R	Reference	Lab I	lot <i>eboo</i> k	7060	pg.	151					
R305013-01	B16W79	0.55	1.02			90		50		49	06/12/03	06/16	GRB-217
R305013-02	B16W80	0.55	1.03			89		50		49	06/12/03	06/16	GRB-218
R305013-03	B16W81	0.57	1.02			87		50		47	06/12/03	06/15	GRB-203
R305013-04	B16W82	0.52	1.05			89		50		48	06/12/03	06/16	GRB-220
R305013-05	B16W83	0.59	1.02			86		50		48	06/12/03	06/16	GRB-221
R305013-06	B16W90	0.60	1.02			82		50		49	06/12/03	06/16	GRB-222
R305013-07	LCS (QC ID=44676)	0.55	1.00			93		50			06/12/03	06/15	GRB-203
R305013-08	BLK (QC ID=44677)	0.54	1.00			97		50			06/12/03	06/16	GRB-223
R305013-09	Duplicate (R305013-04 (QC ID=44678)) 0.55	1.05			84		56		47	06/12/03	06/15	GRB-221
Nominal values	and limits from method	15	1.00			20-105		50	 	180			

METHOD SUMMARIES
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SUMMARY DATA SECTION
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Lab id <u>EBRLNE</u>

Protocol <u>Hanford</u>

Version <u>Ver 1.0</u>

Form <u>DVD-LMS</u>

Version <u>3.06</u>

Report date <u>06/17/03</u>

SAMPLE DELIVERY GROUP H2194

Test IC Matrix SOLID SDG 7507 Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont. TECHNETIUM 99 IN SOIL BETA COUNTING

Hanford
No. 630
SDG H2194

PROCEDURES	REFERENCE	TC99 TR SEP LSC
I KOOLDONED	=	
ļ	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
Ī	CP-021	Preparation of Tc-99m Tracer, rev 2
	CP-002	Q.C. Preparation, rev 4
	CP-003	Addition of Carriers and Tracers, rev 5
(CP-542	Technetium-99 Purification (Soil) by Extraction
		Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD MDA __0.56 ± __0.050 FOR 9 SAMPLES YIELD 89 ± 9

METHOD SUMMARIES Page 8 SUMMARY DATA SECTION Page 26

Lab id EBRLNE Protocol <u>Hanford</u> Version <u>Ver 1.0</u> Form DVD-LMS Version 3.06_ Report date <u>06/17/03</u>

Test I Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY

IODINE 129 IN SOIL GAMMA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG_H2194

RESULTS

RAW SUF-LAB Iodine 129 CLIENT SAMPLE ID SAMPLE ID TEST FIX PLANCHET Preparation batch 7060-151 U R305013-01 7507-001 B16W79 7507-002 B16W80 R305013-02 7507-003 B16W81 u R305013-03 7507-004 B16W82 R305013-04 U R305013-05 7507-005 B16W83 U R305013-06 7507-006 B16W90 ok 7507-007 LCS (QC ID=44676) R305013-07 7507-008 BLK (QC ID=44677) R305013-08 U R305013-09 7507-009 Duplicate (R305013-04)

Nominal values and limits from method 200-PW-2/200-PW-4 OU-Borehole Soil

RDLs (pCi/g)

2.0

METHOD PERFORMANCE

	RAW SUF- TEST FIX	CLIENT	SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC		YIELD %	EFF %	COUNT			PREPARED	ANAL- YZED	DETECTO
Preparation b	batch 706	D-151	2σ prep error	10.0 %	Reference	Lab I	iotebool	c 7060	pg.	151					
R305013-01		B16W79		1.8	0.500			65		932		37	06/04/03	06/04	XSPEC-004
R305013-02		B16W80		2.1	0.500			58		1023		38	06/04/03	06/05	XSPEC-004
R305013-03		B16W81		1.9	0.510			56		1394		38	06/04/03	06/06	XSPEC-004
R305013-04		B16W82		2.0	0.500			53		1436		39	06/04/03	06/07	XSPEC-004
R305013-05		B16W83		2.3	0.500			51		1137		40	06/04/03	06/08	XSPEC-004
R305013-06		B16W90		4.4	0.500			36		616		43	06/04/03	06/10	XSPEC-004
R305013-07		LCS (QC	ID=44676)	2.6	_ 0.500			89		807			06/04/03	06/10	XSPEC-004
R305013-08		BLK (QC	ID=44677)	1.6	0.500			85		625			06/04/03	06/11	XSPEC-004
R305013-09		Duplica	te (R305013-04)	2.9	_ 0.500			55		669		43	06/04/03	06/11	XSPEC-004
		(QC	ID=44678)												
Nominal value	es and lin	nits fro	m method	2.0	0.500			20-10	5	300	•	180			•

METHOD SUMMARIES
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SUMMARY DATA SECTION
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Lab id <u>EBRLNE</u>

Protocol <u>Hanford</u>

Version <u>Ver 1.0</u>

Form <u>DVD-LMS</u>

Version <u>3.06</u>

Report date <u>06/17/03</u>

Test	I Matrix SOLID
SDG	7507
Contact	Melissa C. Mannion

LAB METHOD SUMMARY, cont.

IODINE 129 IN SOIL
GAMMA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG H2194

PROCEDURES REFERENCE I129_SEP_LEPS_GS
CP-024 Iodine-129, Sample Dissolution, rev 3
CP-530 Iodine-129 Purification, rev 0

AVERAGES ± 2 SD MDA 2.4 ± 1.7

FOR 9 SAMPLES YIELD 61 ± 33

METHOD SUMMARIES
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SAMPLE DELIVERY GROUP H2194

Test C Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOIL
LIQUID SCINTILLATION COUNTING

Client <u>Hanford</u>
Contract <u>No. 630</u>
Contract <u>SDG H2194</u>

RESULTS

TAB RAW SUF-

SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Carbon 14

Preparation batch 7060-151 R305013-01 U 7507-001 B16W79 п R305013-02 7507-002 B16W80 R305013-03 7507-003 B16W81 П R305013-04 7507-004 B16W82 R305013-05 7507-005 B16W83 U U 7507-006 B16W90 R305013-06 7507-007 LCS (QC ID=44676) ok R305013-07 U 7507-008 BLK (QC ID=44677) R305013-08 R305013-09 7507-009 Duplicate (R305013-04)

Nominal values and limits from method 200-PW-2/200-PW-4 OU-Borehole Soil

RDLs (pCi/g)

50

WERROR REPRODUCTION

	SUF- FIX CLIENT S	SAMPLE ID	MDA pCi/g	ALIQ 9	PREP FAC	DILU- Tion	YIELD %	EFF %		FWHM keV		PREPARED	ANAL~ YZED	DETECTOR
Preparation bate	ch 7060-151	2σ prep error	10.0 %	Reference	Lab N	otebool	7060	pg.	151		_			
R305013-01	B16W79		3.0	0.328			100		100		30	05/28/03	05/28	LSC-004
R305013-02	816W80		2.6	0.380			100		100		30	05/28/03	05/28	LSC-004
R305013-03	B16W81		3.0	0.331			100		100		29	05/28/03	05/28	LSC-004
R305013-04	B16W82		2.8	0.350			100		100		29	05/28/03	05/28	LSC-004
R305013-05	B16W83		2.9	0.341			100		100		30	05/28/03	05/29	LSC-004
R305013-06	B16W90		2.7	0.374			100		100		31	05/28/03	05/29	LSC-004
R305013-07	LCS (QC	ID=44676)	9.0	0.328			100		10			05/28/03	05/29	LSC-004
R305013-08	BLK (QC	ID=44677)	3.0	0.328			100		100			05/28/03	05/28	LSC-004
R305013-09	•	e (R305013-04) ID=44678)	2.6	0.386			100		100		30	05/28/03	05/29	LSC-004
Nominal values a	and limits from	method	50	0.328					50		 180			

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SAMPLE DELIVERY GROUP H2194

Test	C Matrix SOLID	
SDG	7507	
Contact	Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

CARBON 14 IN SOIL LIQUID SCINTILLATION COUNTING

Client	Hanford	
Contract	No. 630	
Contract	SDG_H2194	

PROCEDURES	REFERENCE	C14_COX_LSC
	CP-251	Tritium/Carbon-14 Oxidation, rev 5

MDA 3.5 ± 4.1 AVERAGES ± 2 SD YIELD 100 ± 0 FOR 9 SAMPLES

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SAMPLE DELIVERY GROUP H2194

Test H _ Matrix SOLID SDG 7507 Contact Melissa C. Mannion

LAB METHOD SUMMARY TRITIUM IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford Contract No. 630 Contract SDG H2194

RESULTS

R305013-10

RAW SUF-SAMPLE ID TEST FIX PLANCHET

CLIENT SAMPLE ID

Spike (R305013-04)

Tritium

ok

400

Х

Preparation batch 7060-151 134 R305013-01 7507-001 B16W79 7507-002 B16W80 152 R305013-02 R305013-03 7507-003 B16W81 130 154 R305013-04 7507-004 B16W82 7507-005 267 B16W83 R305013-05 7507-006 B16W90 147 R305013-06 7507-007 LCS (QC ID=44676) R305013-07 ok R305013-08 7507-008 BLK (QC ID=44677) U 7507-009 Duplicate (R305013-04) ok R305013-09

Nominal values and limits from method

7507-010

RDLs (pCi/g)

200-PW-2/200-PW-4 OU-Borehole Soil

METHOD PERFORMANCE

LAB RAW SUF-MDA ALIG PREP DILU- YIELD EFF COUNT FWHM DRIFT DAYS ANAL-SAMPLE ID TEST FIX CLIENT SAMPLE ID pCi/g FAC TION % min keV KeV HELD PREPARED YZED q DETECTOR Preparation batch 7060-151 2σ prep error 10.0 % Reference Lab Notebook 7060 pg. 151 R305013-01 B16W79 20.9 0.26 50 73 43 06/10/03 06/10 LSC-005 0.27 R305013-02 B16W80 21.4 48 65 44 06/10/03 06/11 LSC-005 R305013-03 B16W81 0.26 20.9 80 46 43 06/10/03 06/11 LSC-005 R305013-04 B16W82 0.27 20.2 50 62 43 06/10/03 06/11 LSC-005 R305013-05 B16W83 0.37 20.7 49 38 43 06/10/03 06/11 LSC-005 R305013-06 B16W90 0.27 21.0 49 69 06/10/03 06/11 LSC-005 R305013-07 LCS (QC ID=44676) 0.30 20.0 33 120 06/10/03 06/11 LSC-005 R305013-08 20.0 33 BLK (QC ID=44677) 0.30 120 06/10/03 06/11 LSC-005 R305013-09 Duplicate (R305013-04) 0.26 21.3 53 60 43 06/10/03 06/11 LSC-005 (QC [D=44678) R305013-10 Spike (R305013-04) 0.30 20.8 53 46 43 06/10/03 06/11 LSC-005 (QC ID=44679) Nominal values and limits from method 400 20.0 25 180

METHOD SUMMARIES Page 13 SUMMARY DATA SECTION

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Test	<u>H</u>	Matrix	SOLID	_

SDG <u>7507</u> Contact Melissa C. Mannion LAB METHOD SUMMARY, cont. TRITIUM IN SOIL LIQUID SCINTILLATION COUNTING

Client	<u> Kanford</u>	
Contract	No. 630	
Contract	SDG H2194	

PROCEDURES REFERENCE 906.0_H3_LSC

CP-216

Tritium in Solid Samples by Azeotropic

Distillation, rev 6

AVERAGES ± 2 SD MDA 0.29 ± 0.068 YIELD 46 ± 15 FOR 10 SAMPLES

METHOD SUMMARIES Page 14 SUMMARY DATA SECTION Page 32

Test NI L Matrix SOLID
SDG 7507
Contact Melissa C. Mannion

LAB METHOD SUMMARY

NICKEL 63 IN SOIL LIQUID SCINTILLATION COUNTING Client Hanford
Contract No. 630
Contract SDG H2194

RESULTS

R305013-09 R305013-10

RAW SUF-LAB Nickel 63 SAMPLE ID TEST FIX PLANCHET CLIENT SAMPLE ID Preparation batch 7060-151 U R305013-01 7507-001 B16W79 7507-002 2.64 B16W80 R305013-02 R305013-03 7507-003 B16W81 U 14.4 7507-004 B16W82 R305013-04 7507-005 B16W83 υ R305013-05 7507-006 B16W90 U R305013-06 7507-007 LCS (QC ID=44676) ok R305013-07 R305013-08 7507-008 BLK (QC ID=44677) U

Nominal values and limits from method

7507-009

7507-010

RDLs (pCi/g)

Duplicate (R305013-04)

Spike (R305013-04)

30

ok

ok

200-PW-2/200-PW-4 OU-Borehole Soil

METHOD	PERFORMANCE
M M: I' H () I)	PERFURMANCE

SAMPLE ID		SUF- FIX	CLIENT	SAMPLI	E ID		MDA pCi/	ALIQ g g	PREP FAC		YIELD %	EFF %	COUNT min	DRIFT KeV		PREPARED	ANAL -	DETECTOR
Preparation	batc	706	0-151	 2σ μ	orep	еггог	10.0 %	Reference	Lab	Notebool	k 7060	pg.	151					
R305013-01			B16W79				2.5	0.500			100		100		33	05/30/03	05/31	LSC-004
R305013-02			B16W80				2.6	0.500			100		100		33	05/30/03	05/31	LSC-004
R305013-03			B16W81				2.5	0.500			100		100		32	05/30/03	05/31	LSC-004
R305013-04			B16W82				2.5	0.500			100		100		32	05/30/03	05/31	LSC-004
R305013-05			B16W83				2.5	0.500			100		100		32	05/30/03	05/31	LSC-004
R305013-06			B16W90				2.6	0.500			100		100		33	05/30/03	05/31	LSC-004
R305013-07			LCS (Q	ID=44	676)	2.9	0.500			100		69			05/30/03	05/31	LSC-004
R305013-08			BLK (Q	ID=44	677)	2.4	0.500			100		100			05/30/03	05/31	LSC-004
R305013-09			Duplica (QC	ate (R3 C ID=44			2.5	0.500			100		100		32	05/30/03	05/31	LSC-004
R305013-10			Spike (Q	(R30501 C ID=44			5.8	0.500			100		<u>18</u>		32	05/30/03	05/31	LSC-004
Nominal valu	Jes ar	nd lii	nits fro	om meth	od		30	0.500			30-10	5	50	 	180	-		

METHOD SUMMARIES
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SAMPLE DELIVERY GROUP H2194

Test NI L Matrix SOLID SDG 7507 Contact Melissa C. Mannion

LAB METHOD SUMMARY, cont. NICKEL 63 IN SOIL

LIQUID SCINTILLATION COUNTING

Client Hanford Contract No. 630 Contract SDG H2194

PROCEDURES	REFERENCE	NI63_LSC
	CP-060	Soil Preparation, rev 4
]	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-281	Nickel-63 Purification By Extraction
		Chromatography, rev 0

AVERAGES ± 2 SD MDA 2.9 ± 2.1 YIELD 100 ± 0 FOR 10 SAMPLES

METHOD SUMMARIES Page 16 SUMMARY DATA SECTION Page 34

SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client	Hanford	
Contract	No. 630	
Case no	SDG H2194	

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

- * LAB SAMPLE ID is the lab's primary identification for a sample.
- * DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.
- * CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.
- * QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

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SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

REPORT GUIDE

Client	Hanford	
Contract	No. 630	
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PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

- * The preparation batches are shown in the same order as the Method Summary Reports are printed.
- * Only analyses of planchets relevant to the SDG are included.
- * Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.
- * The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

These qualifiers should be reviewed as follows:

- X Some data has been manually entered or modified. Transcription errors are possible.
- P One or more results are 'preliminary'. The data is not ready for final reporting.
- 2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

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SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact <u>Melissa C. Mannion</u>

REPORT GUIDE

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Contract	
Case no	SDG H2194

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

- * TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.
- * SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.
- * The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.
- * PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.
- * For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.
- * The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

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SAMPLE DELIVERY GROUP H2194

SDG <u>7507</u> Contact <u>Melissa C. Mannion</u>

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Client	<u>Hani</u>	ford	
Contract	No.	630	
Case no	SDG	H2194	

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

- * TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.
- * The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

- * ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.
- * A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.
- * When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

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SAMPLE DELIVERY GROUP H2194

SDG 7507
Contact Melissa C. Mannion

GUIDE, cont.

Client <u>Hanford</u>
Contract <u>No. 630</u>
Case no <u>SDG H2194</u>

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

- J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.
- B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

- L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.
- H Similar to 'L' except the recovery was high.
- P The RESULT is 'preliminary'.
- X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.
- There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

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SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion

GUIDE, cont.

Client	Hanford		
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Case no	SDG H2194		

DATA SHEET

- * An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.
- * A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.
- * When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

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SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion

REPORT GUIDE

Client	Hanford
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LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

- * All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.
- * An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 - 1. The error of RESULT, including that introduced by rounding the result prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

- 2. The error of ADDED.
- 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits for the recovery.
- * The recovery is underlined if it is outside either of these ranges.

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SAMPLE DELIVERY GROUP H2194

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DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

This value reported for this limit is at most 999.

- * The second limit for the RPD is the larger of:
 - 1. A fixed percentage specified in the protocol.

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SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion

GUIDE, cont.

Client	Hanford
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Case no	SDG_H2194

DUPLICATE

- 2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.
- * The RPD is underlined if it is greater than either limit.
- * If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

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SAMPLE DELIVERY GROUP H2194

SDG 7507
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REPORT GUIDE

Client	Hani	<u>Ford</u>	
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MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

- * REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.
- * The first, computed limits for the recovery reflect:
 - 1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

- 2. The error of ADDED.
- 3. A lab specified, per analyte bias. The bias changes the center of the computed limits.
- * The second limits are protocol defined upper and lower QC limits

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SDG 7507
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GUIDE, cont.

Client	Han	ford	
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Case no	SDG	H2194	

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

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SAMPLE DELIVERY GROUP H2194

SDG 7507 Contact Melissa C. Mannion

REPORT GUIDE

Client	Han:	ford_	
Contract	No.	 	
Case no	SDG	H2194	

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

The J and X flags are as on the data sheet.

- * Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.
- * Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

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SAMPLE DELIVERY GROUP H2194

SDG 7507
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GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2194

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

- * Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.
- * If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

MDAs are underlined if greater than the printed RDL.

- * Aliquots are underlined if less than the nominal value specified for the method.
- * Prepareation factors are underlined if greater than the nominal value specified for the method.
- * Dilution factors are underlined if greater than the nominal value specified for the method.
- * Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.
- * Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.
- * Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

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SAMPLE DELIVERY GROUP H2194

SDG <u>7507</u> Contact <u>Melissa C. Mannion</u>

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Contract No. 630
Case no SDG H2194

METHOD SUMMARY

- * Count times are underlined if less than the nominal value specified for the method.
- * Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.
- * Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.
- * Days Held are underlined if greater than the holding time specified in the protocol.
- * Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

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SAMPLE DELIVERY GROUP H2194

SDG <u>7507</u>
Contact <u>Melissa C. Mannion</u>

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2194

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

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SUMMARY DATA SECTION
Page 49

FH-Central Plateau Project	CI	HAIN OF CUST	AMP	PLE ANALYSIS REQUEST					F03-006-62 Page			of 1	
Collector Johansen/Pope/Pfister		ny Contact Hulstrom	Telepho 373-3					et Coordina IT, SJ	ator]	11100 00-0 011		Data Tu	1
Project Designation 200-PW-2/200-PW-4 OU - Borehole Soil Sampling	Sampli 216-	ing Location -A-37 (C4106); (12.5'-15	n 500	i H2	194 (75	(7)	SAF 1 F03-0		A	Air Quality 43			Days
lice Chest No. ERC 01 017		ogbook No. F-N-3361		COA 117504	OA Method of Shipment 7504ES10 Federal Express				s			_ <u></u>	
Shipped To EBERLINE SERVICES (Formerly TMA)	Offsite	Property No.	030	248			Bill	of Lading/A	jr Bili N	°. 5&&	05/2		
POSSIBLE SAMPLE HAZARDS/REMARKS						7							
		Preservation	Cool 4C	Cool 4		No		None		<u> </u>		<u> </u>	
Special Handling and/or Storage		Type of Container	aG 1	aG 1	AG 1	8 (aG l			<u> </u>		
		No. of Container(s)			_/					<u> </u>	ļ	<u> </u>	
		Volume	120mL	60mI	120mL	60r	mL (60mL		!	<u> </u>		
Chronium Hex - 7196						Spe		Tritium - H3	_				
SAMPLE ANALYSIS			1 4	W. N. O	'			{					
			/	1"								•	
Sample No. Matrix * Sam	ple Date	Sample Time											
B16W79 SOIL 4	128/0	3 1350		<u> </u>		`	<u> </u>						
												ļ	
				ļ .	_	-			<u> </u>			 	
			<u> </u>	 					···		-	ļ	
CHAIN OF POSSESSION S	ign/Print	l Names		Isi	PECIAL INS	TRIKCTI	IONS				<u>.l</u>	1	Matrix *
Relinquished B/Removed From Date/Time /4 1/5 Receiv	red By/Stor	ed In Da	ate/Time		 The laborator sport both Keros 	y is to achi	eve a det	ection limit of	50.0 pCi/g	g for Carbon-14.		101y is to	S=Soil SE=Sediment
	red By/Stor	A 3725 428	0 ³ /6 ²	<u>'</u>	l) Technetium-	•	-				• •	, -	SO=Solid SI=Sindge
REF 1A 3721 5103 1100 SJ	GALER		3 1/1	00 i	29; Nickel-63; 1	Veptunium-	237		-				W = Water O=Oil
	red By/Stor	· • • • • • • • • • • • • • • • • • • •	ate/Time										A=Air DS=Drum Solids DL=Drum Liquids
Reimmisshed By/Removed From Date/Time Resei	ed By/Stor	ed In	5-20	2	Person1								T=Tissac WI=Wipe L=Liquid
Relinquished By/Removed From Date/Time Receiv	red By/Stor	ed in D)	Personnel no relinquish sar Ref# // o	t availabl nples fro	le to m the 3	728					V=Vegetation X=Other	
Relinquished By/Removed From Date/Time Received By/Stored In Date/Time						/_ <u>ک_</u> ا		23					
LABORATORY Received By SECTION			T	itle	·- <u>-</u>					· —		Date/Time	
FINAL SAMPLE Disposal Method DISPOSITION	·				Di	sposed By					·	Date/Time	

FH-Central Plates	u Project	C	HAIN OF CUST	ODY/S	AMPLI	E ANAL'	YSIS	REQUEST	FC	F03-006-63 Page 1			
Collector Johansen/Pope/Pfister			any Contact Huistrom	Telepho 373-3				Project Coordinat TRENT, SJ	Price Code	THE COME Off		rnaround	
Project Designation 200-PW-2/200-PW-4 OU - B	orehole Soil Sampling	Samp 216	ling Location 5-A-37 (C4106); (17.5'-20	n 59	6 H219	74 C750	7)	SAF No. F03-006	Air Qualit	Air Quality		45 Days	
Ice Chest No. ERC O	1 017	Field	Logbook No. F-N-3361	COA 117504ES10				Method of Shipment Federal Express					
Shipped To EBERLINE SERVICES (For	merly TMA)	Offsit	Offsite Property No. A030 Z48 Bill of La						r Bill No. SEZ	ospe			
POSSIBLE SAMPLE HAZA	RDS/REMARKS				1	T ,	/						
			Preservation	Cool 4C	Cool 4C	Cool 4C	Nos						
Special Handling and/or S	Storage		Type of Container	aG	aG	AG .	3eG						
_			No. of Container(s)	l	1	<i>X</i> '		1					
			Volume	120mL	60mL	120mL	60n	L 60mL					
			Chromium Hex - 7196	NO2 NO3 -	Oil & Grease - 413.1	See item Speci							
	SAMPLE ANAI			/12		Instruc	tions.						
		A ST	Todo!			-							
Sample No.	Matrix *	Sample Date	Sample Time										
B16W80'	SOIL	4/28/02	1510				7	<u> </u>					
					_		j						
CHAIN OF POSSESSIO		Sign/Pri				CIAL INSTI			0.0.57 55.1			Matrix *	
Relinquished By/Removed From		Received By/Sto	red in D 3728 4280	ate/Time 3 / G 4		the laboratory is the both kerosem	s to actue c and dic	rve a detection limit of 5 se l range computants fro	0.0 pCt/g for Carbon-14 on WTPH-D enalysis.		2/03	S=Sail SE=Sediment	
Relinquished By/Removed From	Date/Time	Received By/Sto	ored In / D	ate/Time		Technetium-99;	Strontiu	n-89,90 - Total Sr; Isot	topic Thorium {Thorium	-232}; Carbon-14	t; Iodine-	SO=Solid SI=Studge	
RUFF 1A 3729	5,103 110				100 129	Nickel-63; Nej	ptunium-2	237				W = Water O=Oil	
Retinquished By/Removed From	Date/Time 5103 10	Received By/Sto	лоо ш _ ;	ate/Time	ŀ							A=Air DS=Drum Solida DL=Drum Liquids	
Ristinguished By/Removed From	Date/Time	Retained By/Ste		ate/Time		Personnel no						T=Tissac WI=Wipe L=Liquió	
Retinquished By/Removed From	Date/Time	Received By/Str		ate/Time	I	relinquish sai Ref# //	mpies n on <u>5</u>	rom the 3728				V=Vegetation X=Other	
Relinquished By/Removed From	Date/Time	Received By/Sta	ored In D	ate/Time									
LABORATORY Received B SECTION	у			т	itte	<u> </u>				D	ate/Time		
FINAL SAMPLE Disposal M DISPOSITION	lethod					Dîsp	osed By			E	Date/Time		

FH-Central Platea	u Project	CI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST F03-006-64 Page 1										of 1	
Collector Johansen/Pope/Pfister		Сопр	nny Contact Hulstrom	Telepho 373-3	ne No.			Project Coordinat TRENT, SJ	or P	rice Code	8N	Data Tur	- '	
Project Designation 200-PW-2/200-PW-4 OU - Bo	orehole Soil Sampling	Sampl 216	ing Location -A-37 (C4106); (27.5'-30	, SD	a 421	94(750	07)	SAF No. F03-006	A	ir Quality		45 1	45 Days	
Ice Chest No. ER C	01 017		ogbook No. F-N-3361		COA 117504E	OA Method of Shipment 7504ES10 Federal Express					<u>.</u>			
Shipped To EBERLINE SERVICES (For		Offsite	Property No.		Bill of Lading/Air Bill No. SEE OSPC									
POSSIBLE SAMPLE HAZA	RDS/REMARKS									}	Ì		ļ	
			Preservation	Cool 4C	Cool 4C	Cool 4C	Nos							
Special Handling and/or S	torage		Type of Container	aG	aG	345	a/G							
			No. of Container(s)	1	1	1 100 1	1			<u> </u>		}		
			Volume	120mL	60mL	120mL	60m	ıL 60mL	·			<u> </u>		
			·	Chromium Hex - 7196	NO2/NO3	Oil & Grease - 413.1	See item Speci Instruct	الفنا			ļ		: 	
	SAMPLE ANALYS	IS .		24	122/07						ļ			
				l W	Mr.					Tiero				
Sample No.	Matrix *	Sample Date	Sample Time											
B16W81	SOIL	4/29/0	3 0745	/			X	\ \ \ \ \		Blel	(7)	WSCF		
		1			-		 					 	 	
` `	<u></u>	 		-		-	 			 		 		
		<u> </u>	_	-	+	- 				 		 	· · · · · · · · · · · · · · · · · · ·	
CHAIN OF POSSESSIO	N	Sign/Prio		1	SPI	ECIAL INSTI	RUCTIO	ONS		<u></u>		<u></u>	Matrix *	
Relinquished By R. T. V. V. V. V. V. V. V. V. V. V. V. V. V.	xa 14/1 (2)	Received By/Sto	red In Epc p	1910314		The laboratory is out both kerosem	s to achie and dio	eve a detection limit of 5	0.0 pCi/g	for Carbon-14. Danalysis.	Se 1/	(22/1)	S=Soil SB=Sodiancet	
Relinquished By/Removed From	Date/Tithe 1400	Received By/Sto	red In	ate/Time	400 (1)			m-89,90 Total Sr, Iso	topic Thor	ium (Thorium-2	232}; Carbon-	14; Iodine-	SO=Solid Si=Shalge W = Water	
Relinquished By/Removed From	15 4.2903 Date/Time	Received By/Sto		ate/Time		9; Nickel-63; Nep) (UD) (UU) - /	251					O-Oil A-Air	
REF 10 3728 5		SJGAL Received By/Sto	ESJAL 510.	3 //00	<u></u>								DS=Drunt Solids DL~Drunt Liquids T=Tissue	
Relinquished By/Removed From		Person	nel not	available to					W!=Wipe L=Liquid					
Relinquished By/Ramoved From	Date/Time	Received SylSto	red in G Si La	00	reinqu Ref#_	ish san <u>B</u> or	available to inples from the 3721	<u>3</u>				V=Vegetation X=Other		
Relinquished By/Removed From	Date/Time	Received By/Sto	red in D	ate/Time					J					
LABORATORY Received B	у	L		Т	litle							Date/Time	· <u>I · · · · · · · · · · · · · · · · · · </u>	
FTNAL SAMPLE Disposal Method DISPOSITION						Disposed By Date/Time					Date/Time			

FH-Centra	l Platea	u Project		CHA	IN OF CUST	CODY/SAMPLE ANALYSIS REQUEST						F03-006-65 Page 1			of <u>1</u>
Collector Johansen/Pope/Pfis	iter			Company LC Huls		Telephor 373-39					oject Coordinator ENT, SJ	Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW	'-4 OU - Bo	rehole Soil Sampling		Sampling 216-A-	Location 37 (C4106); (37.5'-40	, 50	१८ ५३	194 (75	507-)		F No. 3-006	Air Qualit	y 🗆	45 I 	Days
Ice Chest No. EX	C 0	1 017]	Field Log HNF-N		117504ES10 Federal Express						·	<u></u>		
Shipped To EBERLINE SERV				Offsite Pr	operty No. A-O	302	248			Bil	ll of Lading/Air Bi	11 No. 3 5 E	ogeo-	<u>.</u>	
POSSIBLE SAMPLE HAZARDS/REMARKS									1				1		
					Preservation	Cool 4C	Cool 4C	Cool	Not	06	None]	
Special Handling	andlan St	200.00		7	Type of Container	aG	aG	aG	вG	3	aG				
Special manuful	agu/or Si	orage		N	lo. of Container(s)	1	1	1	1		1				
					Volume	120mL	60m/L	120mL	60m	nI.	60mŁ				
						Chromium Hex - 7196	NØ2/NO3 - 353.2	Oil & Gresse - 413.1	See item Spec Instruc	cial	Tritium - H3				
·		SAMPLE ANAI	YSIS			nt/	190		Instruc	CUK) JIS.					
•					•	1	W.						TILTO	b :	
Sample No).	Matrix *	Sample	Date	Sample Time										
B16W82		SOIL	4/2	A/03	0900	/			Y	<u></u>	K		BILOL	168 (1	XCE)
		<u></u>				<u> </u>	<u> </u>	<u> </u>	<u> </u>		 			 	<u> </u>
						ļ		<u> </u>	 		 			 	
							 	-} -	-		 		-	 	
CHAIN OF PO	OSSESSIO	N .	Sign	n/Print N	ames	<u>.l</u>	SPF	CIAL INSTI	PIICTI	ONS	<u></u>		1	<u> L</u>	Matrix *
inama bent			Received	By/Stored	in C LC Di	ate/Time	** 7	The laboratory	s to achie	eve a	detection limit of 50.0 age compounds from \	pCi/g for Carbon-1	1. ** The labora	L2/03	S-Soil
		DONG DAILY TIME 1 4	(Y) VE A	ButStored	REALLY Y	29 03/ ate/Time	<u> </u>				,90 - Total Sr, Isotopic		• •	•	SE-Sediment SO-Solid SI-Shelge
Relinquished By/Remove	F= 41	Les 4.29		3 3	727 4-2	703		Nickel-63; Ne			,70 ·· 10mm Dz, motop.	(1100		., 200020	W = Water O=Oil
Relinquished By/Remove	ed From	Date/Time	Received	By/Stored	la D	ate/Time	(100)								A=Air DS=Drum Solids
				By/Stored		ate/Time	100								DL=Drum Liquids T=Tissue WI=Wipe
Relinquished By/Remov			n = =	-D (E)	(P.	ersonnel not	n.uni1_1						L=Liquid V=Vegetation
Refiguished By/Removed From Date/Time Received By/Stored In Date/Time Personnel not available to relinquish samples from the 3728 Refinquished By/Removed From Date/Time Personnel not available to relinquish samples from the 3728 Ref # /B on 5 / / 63								X=Other							
Relinquished By/Remov	ed From	Date/Time	Received	By/Stored	In D	ate/Time		" <u> 4</u> OII	ر_ن_ ا	! <u>/</u> _	103				
LABORATORY SECTION	Received By					T	itle]	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Me	ethod				<u> </u>		Disp	osed By					Date/Time	

35%

FH-Central Platea	u Project	CI	HẨN OF CUST	ODY/S	AMPLE	ANAL	YSIS	REOUEST	F03	3-006-66	Page 1	of 1
Collector Johansen/Pope/Pfister		Compa LC I	ny Contact Hulstrom	Telepho 373-3	ne No. 928			Project Coordinator TRENT, SJ	Price Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - Bo	rehole Soil Sampling	Sampl 216-	ing Location A-37 (C4106); (47.5'-50	n 50a	H2194	1750	7)	SAF No. F03-006	Air Quality	Air Quality 45]		
Ice Chest No.	01017	Field I	ogbook No. -N-3361	COA Method of Shipment 117504ES10 Federal Express					t			
Shipped To EBERLINE SERVICES (Form	nerly TMA)	Offsite	Property No. Ac	530	248			Bill of Lading/Air l	Bill No. 560	3 03P		
POSSIBLE SAMPLE HAZAF	RDS/REMARKS			Cool 4C	Cool 4C	Cool	Non	e Nome				
			Preservation			_/_				<u> </u>		
Special Handling and/or St	Orage		Type of Container	aG	aG	aG	aG				<u> </u>	
			No. of Container(s)	1	1 /	1	1	1		<u> </u>		
			Volume	120mL	60m)	120mL	60m	L 60mL		1	ļ	
	SAMPLE ANALYS		Chromium Hex - 7196	NG2/NO3 - 353.2	Oil & Grease - 413.1	See item Speci Instruct	iàl					
		1 / X	M				Tiet	d :				
Sample No.	Matrix *	Sample Date	Sample Time			ta de la companya de la companya de la companya de la companya de la companya de la companya de la companya de				160 /4	100 CV	1
B16W83	SOIL	1129103	<u> 102()</u>	/		 	工	<u> </u>	BIGU	79 (U	(XF)	
					-} -	 	 			 	 	
					 	<u> </u>	\vdash			 	<u> </u>	 -
					 	 				 	 	
CHAIN OF POSSESSIO	N	Sign/Prin	Names	<u> </u>	SPE	CIAL INSTI	RUCTIO	ONS	L		<u> </u>	Matrix *
Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From	Date/filme 144	Received By/Ston Received By/Ston Received By/Ston	R41111 3 720	ate Time 4 9 3 ate Time 4 - 24 ate/Time	H(0)	t both korosoo	sand die. Strontiu	rve a detection limit of 50. sel range compounds from m-89,90 — Total Sr; Isoto 137	W IPH-D analysis.	ade A	122/03	S-Soil SE-Sodiment SO-Solid SI-Shrige W - Water O-Oil A-Air
Relinquished By/Removed From	50 John 51	03 // ate/Time	00		1	kla to				DS-Drum Solids DL-Drum Liquids T-Tissue WI-Wipe L-Liquid V-Yoggintion		
Relinguished By/Removed From Relinguished By/Removed From		ate/Time	2C0 1	ersonnel no elinquish sa Ref# 113	mples f	from the 3728				X-Other		
LABORATORY Received By SECTION		!		Т	ille			· · · · · · · · · · · · · · · · · · ·		. <u></u> 1	Date/Time	1
FINAL SAMPLE Disposal Me DISPOSITION	thod					Dispo	osed By				Date/Time	

FH-Central Plateau	n Project	CI	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST								F03-006-73 Page 1 of 1			of <u>1</u>	
Collector Johansen/Pope/Pfister	· · · · · · · · · · · · · · · · · · ·	Comp	any Contact Hulstrom	Telepho 373-3	ne No.				Proje	ect Coordina VT, SJ	tor	rice Code	8N	Data Tur	
Project Designation 200-PW-2/200-PW-4 OU - Bo	rehole Soil Sampling	Sampl 216	ing Location -A-37 (C4106); (17.5'-20	, SDG	H2 K	94	(750	7)	SAF F03-0		A	Air Quality [] 45			Days
Ice Chest No. ERC 0	1 017		Logbook No. F-N-3361		COA 11750	504ES10 Federal Express									
Shipped To EBERLINE SERVICES (Form		Offsite	Offsite Property No. A030248						Bill of Lading/Air Bill No. SEE OSP					r	
POSSIBLE SAMPLE HAZAF	RDS/REMARKS		Preservation	Cool 4C	Cool 4	4C	Coolic	Nor	x	None					
Control VI and V			Type of Container	aG	aG		aG	æG	}	aG				-	
Special Handling and/or St	orage		No. of Container(s)	1	1	\mathcal{A}	1 120mL	60m		1 60mL		-	-		
			Volume	120mL	60m		Oil & Grease -	See item		Tritium - H3	· <u></u>				
	SAMPLE ANALYS	is		Chromaum Hex - 7196			413.1	Spec Instruc	أأهخ	Tradia - 13					
Sample No.	Matrix *	Sample Date	Sample Time												
B16W90	SOIL	428	03 15(0	V			-	7	۷	*			<u> </u>	-	
				ļ	<u> </u>			<u> </u>						 	
·					+			 					 	 	
					 				\neg				1		
CHAIN OF POSSESSIO	 N	Sign/Pri			s	SPEC	IAL INSTE	LRUCTI	ONS	_					Matrix *
Relinquished By/Removed From Relinquished By/Removed From Relinquished By/Removed From S. CALLAND A.	Date/Time / 5 / 5 / 5 / 5 / 5 / 5 / 5 / 5 / 5 /	Received By/Sto REF / A Received By/Sto Received By/Sto FED	3728 42803 red in 15 L6 11 A L 5 red in E	ate/Time		, report (1) To	both-kerosene	Stroutiu	inel rang im-89,90	e compounds fi	om Wiri	for Carbon-14. 1-D analysis. rium {Thorium-	982 41	122/03	S-Soil SB-Sedispent SO-Solid SI-Sleedge W = Water O-Oil A-Air DS-Drum Solide DIDrumt Liquids T-Tissue
Relinguished By/Removed From Relinguished By/Removed From	Date/Time	Date/Time Reserved By/Stored In S. 2 € 3													WI=Wipe L=Liquid V=Vegetation X=Other
Relinquished By/Removed From Date/Time Received By/Stored In						. 1	Personnel n elinquish s Ref#/A	or avai	from	the 3728					
LABORATORY Received By SECTION	•	<u> </u>			Title									Date/Time	
FINAL SAMPLE Disposal Me	ethod						Disp	osed By						Date/Time	

EBERLINE.

ANALYTICAL SERVICES GROUP

Richmond, CA Laboratory

SAMPLE RECEIPT CHECKLIST

Client:	FLR	Date/Time	received	1000	5.2.	65	
coc No. F03-006-62,63,64,65,66,73							
}		d TAT (Days)		. Receive	d Yes [] No []	
INSPECTION							
1.	Custody seals on shipping container into	ict? Ye	سلرا ٥	No [] 1	N/A []	
2.	Custody seals on shipping container dat	ed & signed? Ye	s [سل	No I] 1	V/A []	
З.	Custody seals on sample containers inta	ct? Ye	s h_h	No [1 1	N/A []	
4.	Custody seals on sample containers date	ed & signed? Ye	الساء ٥	Na [1 1	1/A[]	
5.	Packing material is:	, We	et[]	Dry [4		
6.	Number of samples in shipping containe	r: <u> 6 </u>					
7.	Number of containers per sample:		r see CoC)		
8.	Paperwork agrees with samples?	Ye	s[No []		
9.	Samples have: Tape [] Hazard labels [] Rad labels [LAppropriate sample labels [L						
10.	Samples are: In good condition Leaking [] Broken Container [] Missing []						
11,	Samples are: Preserved [] Not preserved [] Preservative						
12.	Describe any anomalies:						
}					· 		
13.	Was P.M. notified of any anomalies? Yes [] No [] Date						
14. Received by // Date: 5-2-03 Time: 150 G							
Customer Sample Customer Sample							
	No. cpm mR/hr wipe	No.	-	cpm	mR/hr	wipe	
B 16W79 240 .628							
316W80 CV0 1022							
3	CW 82 CYO .027				·		
B16W83 28W31 8							
<u> </u>							
		 					
Ion Chamber Ser. No. 799574		Calib	oration da	te	12-12-0	20	
Alpha Meter Ser. No.		Calib	_ Calibration date				
Beta/Ga	amma Meter Ser. No. 4011	Calib	oration da	te3	-20-3		